

ORDER NO.DSD0404015C1

B12

Service Manual

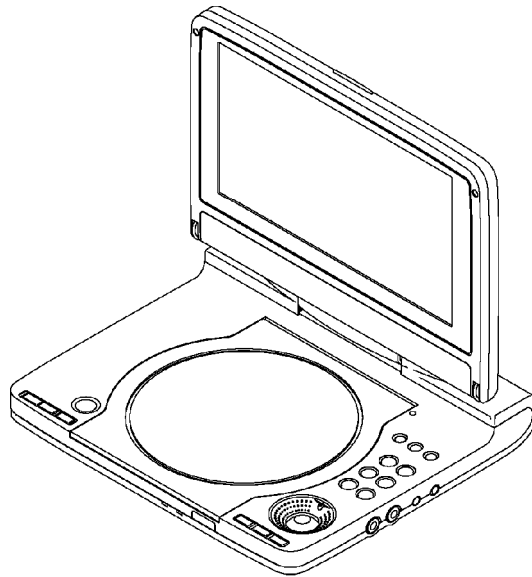
Portable DVD AUDIO/VIDEO PLAYER

DVD-LS50PP

REA1904Z Mechanism Series


Colour

(S).....Silver Type



SPECIFICATIONS

Specifications

Operating temperature range:	+5 to +35°C (+41 to +95°F)
Operating humidity range:	5-90% RH (no condensation)
Region number:	Region No.1
Discs played:	DVD-RAM (DVD-VR compatible, JPEG formatted discs) DVD-Video, DVD-Audio Music CD [CD-DA (CD-TEXT compatible)] Video CD CD-R/ CD-RW [CD-DA (CD-TEXT compatible), Video CD, SVCD, MP3, WMA, JPEG, HighMAT Level 2 (Audio and Image)] DVD-R (DVD-Video compatible)
Signal system:	NTSC
LCD screen:	7"  -Si, TFT wide-screen LCD
Composite-video output:	
Output level:	1Vp-p (75 Ω)
Output terminal:	Mini-jack
Number of terminals:	1system (output only)
S-video output:	
Y output level:	1Vp-p (75 Ω)
C output level:	0.286Vp-p (75 Ω)
Output terminal:	Mini-jack
Number of terminals:	1system (also used for composite-video output)
Audio output:	
Output level:	1.5Vrms (1kHz, 0dB, 10k Ω)
Output terminal:	Stereo mini-jack
Number of terminals:	1system (output only)
Audio performance:	
(1) Frequency response:	
● DVD (linear audio):	4Hz-22kHz (48kHz sampling) 4Hz-44kHz (96kHz sampling)
● DVD audio:	4Hz-88kHz (192kHz sampling)
● CD audio:	4Hz-20kHz
(2) S/N ratio:	
● CD audio:	115dB
(3) Dynamic range:	
● DVD (linear audio):	98dB
● CD audio:	97dB
(4) Total harmonic distortion:	
● CD audio:	0.008%
Digital audio output:	
Optical digital output:	Mini optical terminal

Number of terminals:	1system (also used for audio output)
Pickup:	
Wave length:	662nm/ 785nm
Laser power:	CLASS II/ CLASS I
Power supply:	DC 9V (DC IN terminal) / DC 7.2V (Exclusive battery terminal)
Power consumption (Using included AC adaptor):	12W (Unit only: 9W) Recharging 12W
AC adaptor:	
Power source:	AC 100-240V, 50/60Hz
Power consumption:	30W
DC output:	9V, 2000mA
Battery pack CGR-H701 (lithium ion):	
Voltage:	7.2V
Capacity:	2150mAh
Dimensions (excluding protrusions and battery):	190(W) x 165(D) x 29.2*(H) mm [715 /32 " (W) x 61 /2 " (D) x 15 /32 " (H)] *27.8mm(13 /32 ") at lowest point [H=37.8mm (11 /2 ") including battery]
Mass (including battery):	795g (28.04oz.)

solder:

This model uses lead free solder (PbF).

Note

Specifications are subject to change without notice.

Mass and dimensions are approximate.

Power consumption in standby mode (using included AC adaptor): Main unit: 0.5W

Manufactured under license from Dolby Laboratories.

"Dolby" and the double-D symbol are trademarks of Dolby Laboratories.

"DTS" and "DTS 2.0+ Digital Out" are trademarks of Digital Theater Systems, Inc.

Apparatus Claims of U.S. Patent Nos. 4,631,603, 4,577,216, and 4,819,098, licensed for limited viewing uses only.

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Windows Media, and the Windows logo are trademarks, or registered trademarks of Microsoft Corporation in the United States and/or other countries.

WMA is a compression format developed by Microsoft Corporation. It achieves the same sound quality as MP3 with a file size that is smaller than that of MP3.

MPEG Layer-3 audio decoding technology licensed from Fraunhofer IIS and Thomson multimedia.

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Panasonic

1. SAFETY PRECAUTIONS

1.1. GENERAL GUIDELINES

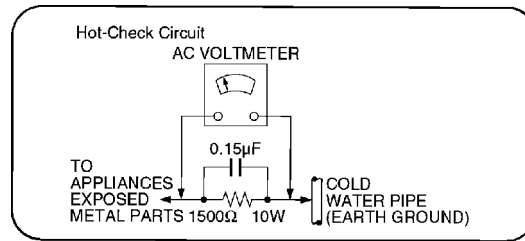
- 1. When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
- 2. After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
- 3. After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

1.1.1. LEAKAGE CURRENT COLD CHECK

- 1. Unplug the AC cord and connect a jumper between the two prongs on the plug.**
- 2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between 1M Ω and 5.2M Ω . / When the exposed metal does not have a return path to the chassis, the**

reading must be ∞ .

Figure 1



1.1.2. LEAKAGE CURRENT HOT CHECK (See [Figure 1](#) .)

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 1.5k Ω , 10 watts resistor, in parallel with a 0.15 μ F capacitors, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in [Figure 1](#) .
3. Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
4. Check each exposed metallic part, and measure the voltage at each point.
5. Reverse the AC plug in the AC outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 or equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

2. PREVENTION OF ELECTRO STATIC DISCHARGE (ESD) TO ELECTROSTATICALLY SENSITIVE (ES) DEVICES

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).

1. Immediately before handling any semiconductor component or

semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.

2. After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
3. Use only a grounded-tip soldering iron to solder or unsolder ES devices.
4. Use only an anti-static solder removal device. Some solder removal devices not classified as "anti-static (ESD protected)" can generate electrical charge sufficient to damage ES devices.
5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).
7. Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.

Caution

Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.

8. Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).

3. PRECAUTION OF LASER DIODE

CAUTION:

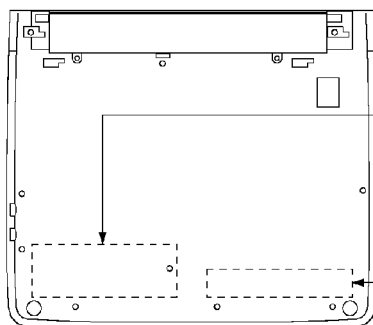
This product utilizes a laser diode with the unit turned "on", invisible laser radiation is emitted from the pickup lens.

Wave length: 658nm/790nm

Maximum output radiation power from pickup: 100 μ W/VDE

Laser radiation from the pickup lens is safety level, but be sure the followings:

1. Do not disassemble the optical pickup unit, since radiation from exposed laser diode is dangerous.
2. Do not adjust the variable resistor on the pickup unit. It was already adjusted.
3. Do not look at the focus lens using optical instruments.
4. Recommend not to look at pickup lens for a long time.



CAUTION- LASER RADIATION WHEN OPEN AND INTERLOCK DEFEATED. DO NOT STARE INTO BEAM. FDA 21 CFR / Class II
CAUTION- VISIBLE AND INVISIBLE LASER RADIATION WHEN OPEN AND INTERLOCKS DEFEATED. IEC60825-1/ Class 3b
AVOID EXPOSURE TO BEAM.

ATTENTION- RAYONNEMENT LASER VISIBLE ET INVISIBLE DANGEREUX EN CAS D'OUVERTURE ET LORSQUE LA SÉCURITÉ EST NEUTRALISÉE. EXPOSITION DANGEREUSE AU FAISCEAU.

Product complies with DHHS Rules 21 CFR Subchapter J in effect at date of manufacture.
Matsushita Electric Industrial Co., Ltd.
Kadoma, Osaka, Japan. MANUFACTURED

CAUTION!

THIS PRODUCT UTILIZES A LASER.

USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

4. HOW TO REPLACE THE LITHIUM BATTERY

This model is using a lithium battery for the remote control ass'y.

NOTE:

The lithium battery is a critical component. (Type No.: CR2025 Manufactured by Panasonic.)

It must never be subjected to excessive heat or discharge.

It must therefore only be fitted in equipment designed specifically for its use.

Replacement batteries must be of the same type and manufacture.

They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.

Do not attempt to re-charge the old battery or re-use it for any other purpose.

It should be disposed of in waste products destined for burial rather than incineration.

(For English)

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the equipment manufacturer.
Discard used batteries according to manufacturer's instructions.

(For French)

PRECAUTION

Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.
Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant.

5. LITHIUM ION BATTERY



A lithium ion/polymer battery that is recyclable powers the product you have purchased. Please call 1-800-8-BATTERY for information on how to recycle this battery.

L'appareil que vous vous êtes procuré est alimenté par une batterie au lithium-ion/lithium-polymère. Pour des renseignements sur le recyclage de la batterie, veuillez composer le 1-800-8-BATTERY.

6. ABOUT LEAD FREE SOLDER (PbF)

Distinction of PbF PCB: PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.

Caution:

- Pb free solder has a higher melting point than standard solder;
Typically the melting point is 50 - 70°F (30 - 40°C) higher. Please use

- a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to $700 \pm 20^{\circ}\text{F}$ ($370 \pm 10^{\circ}\text{C}$).
- Pb free solder will tend to splash when heated too high (about 1100°F / 600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

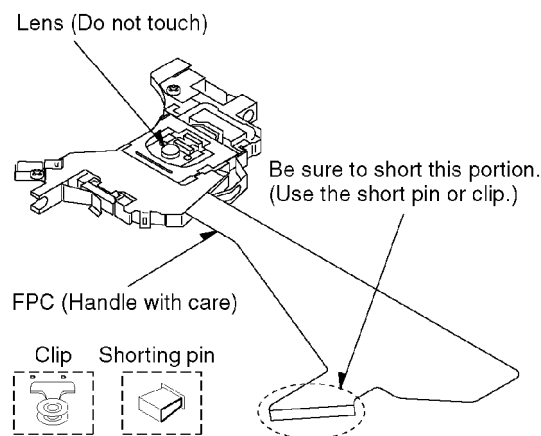
7. HANDLING PRECAUTIONS FOR TRAVERSE DECK

The laser diode in the optical pickup may break down due to potential difference caused by static electricity of clothes or human body.

So be careful of electrostatic break down during repair of the optical pickup.

7.1. Handling of optical pickup

1. Do not subject the optical pickup to static electricity as it is extremely sensitive to electrical shock.
2. To prevent the breakdown of the laser diode, an antistatic shorting pin is inserted into the flexible board (FPC Board). / When removing or connecting the short pin, finish the job in as short times as possible.
3. Be careful not to apply excessive stress to the flexible board (FPC Board).
4. Do not turn the variable resistor (Laser power adjustment). / It has already been adjusted.



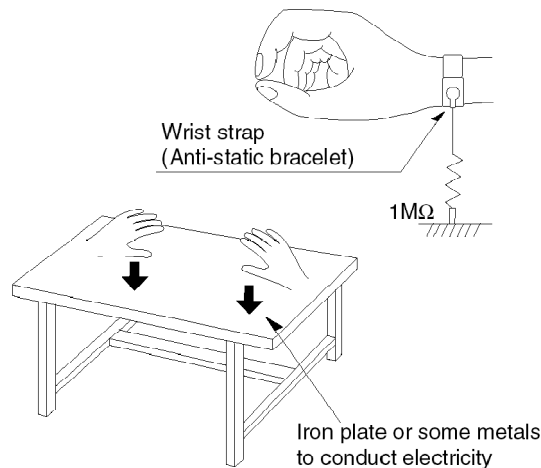
7.2. Grounding for electrostatic breakdown prevention

1. Human body grounding / Use the antistatic wrist strap to discharge the static electricity from your body.

2. **Work table grounding / Put a conductive material (sheet) or steel sheet on the area where the optical pickup is placed and ground the sheet.**

Caution

The static electricity of your clothes will not be grounded through the wrist strap. So take care not to let your clothes touch the optical pickup.



8. DISASSEMBLY, REASSEMBLY AND SERVICE POSITION



Before trying to disassembling, reassembling or replacing parts, make sure the DC receptacle is disconnected; otherwise there is a danger of causing an electrical shock accident or injury.



The laser does not come on when the inner cover is opened. If the objective lens of the optical pick-up shines in red when the inner cover is opened, turn off the power immediately and check.

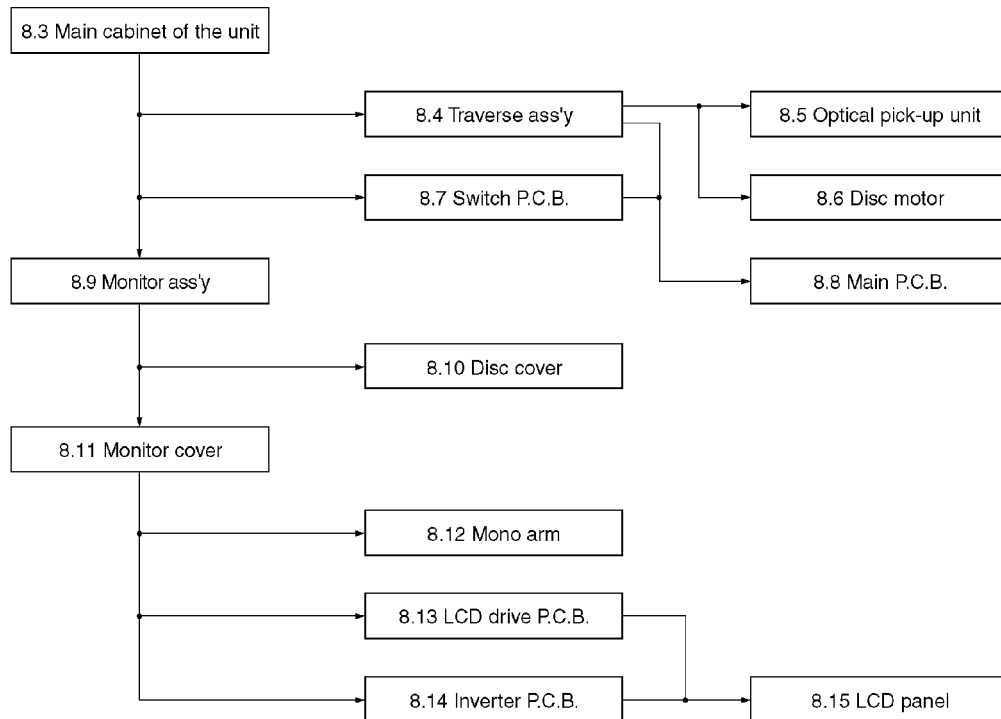


If you need to turn on the laser for any reason, such as playback inspection, never look directly at the laser light.



When disassembly of the unit is needed, remove the disk from the unit. Use caution not to give damage to the LCD surface.

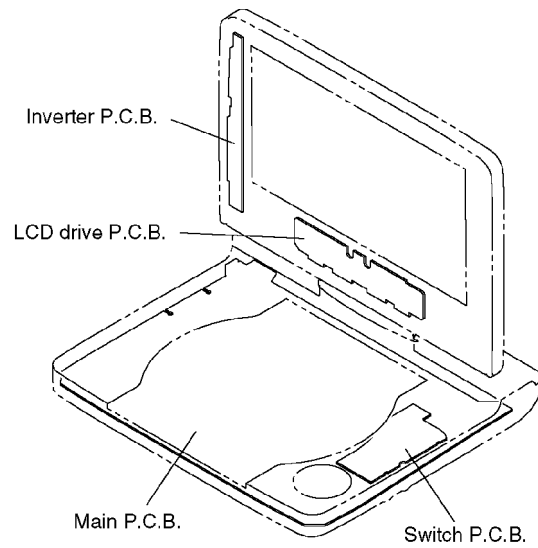
8.1. Disassembly



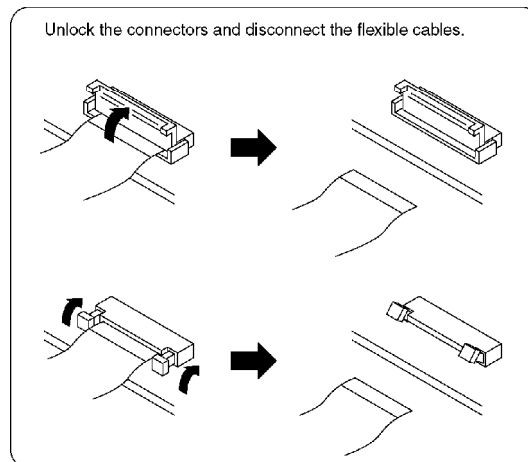
<Caution to be taken when disassembling and reassembling the unit>

- Disconnect the flexible cable from the main P.C.B before disassembling the monitor assembly.
- Do not apply undue force on the flexible cable. There is a danger of breaking the cable.
- Do not touch the terminals of the flexible cable with your bare hands.
- Disassembly and reassembly should be performed in the specified order.
- Hold the LCD panel by its edges.
- Do not press the LCD panel strongly.
 - * If the LCD panel was pressed strongly by chance during disassembly or reassembly, leave it for about 10 seconds before energizing the panel.
- To clean the LCD panel, wipe with a soft cloth, such as gauze, saturated with isopropyl alcohol.
 - * Do not wipe the LCD panel with a dry gauze.
 - * Never use water for cleaning the LCD panel.
 - * Never use the following solvents:
 - (ketone: acetone and others)
 - (aromatic compounds: xylene, toluene)
 - (halogenides)
 - * If the water splashes on the LCD panel, wipe it away immediately.

8.2. P.C.B. location

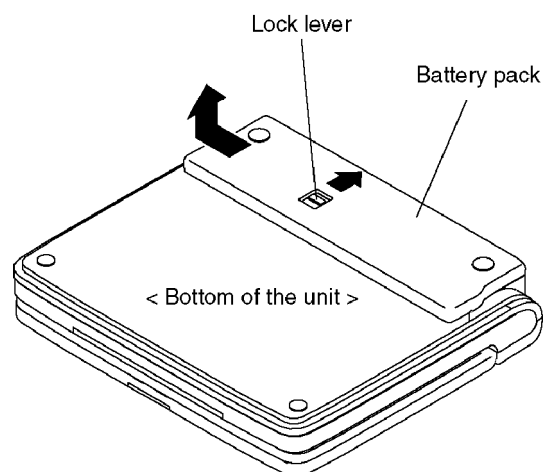


8.3. Main cabinet of the unit

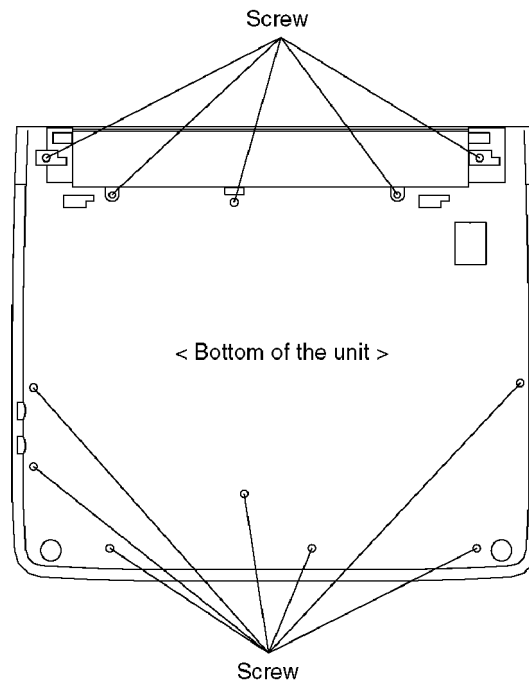


<Removing battery pack>

Release the lock lever and remove the battery pack in the direction of the arrow.



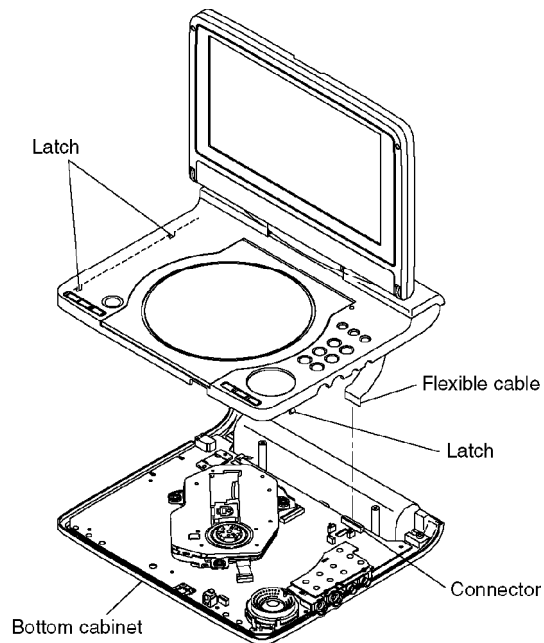
1. Remove the 12 screws from the bottom of the unit.



2. Release the latches.

3. Lift the unit and remove the bottom cabinet.

4. Remove the flexible cable from the connector.



8.4. Traverse assembly

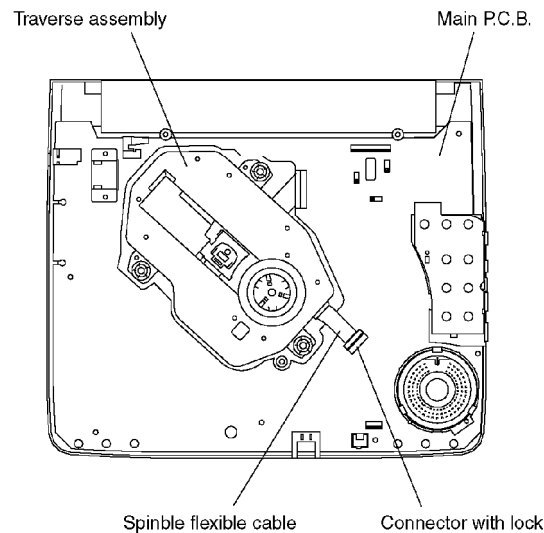


Take antistatic measures before servicing the traverse unit and its related devices.

8.4.1. Removing traverse assembly

Make sure the external parts are removed.

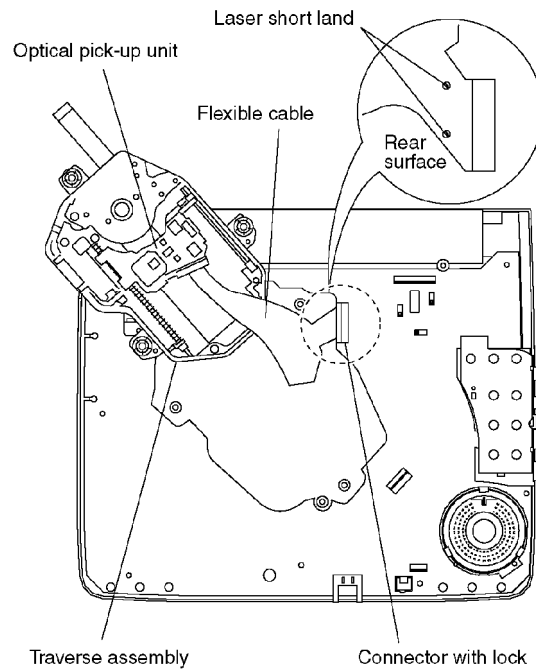
1. Unlock the connector and remove the spindle flexible cable.



2. Remove the traverse assembly.

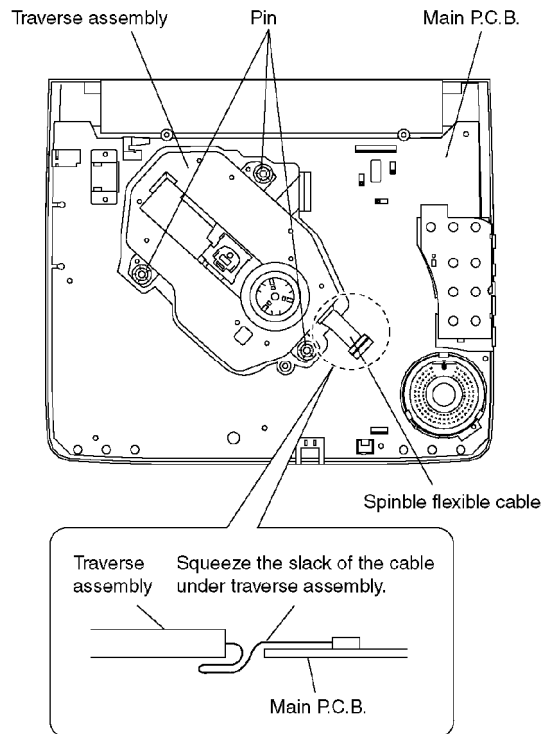
3. There is the optical pick-up unit at the bottom of the traverse assembly. / Solder the 2 laser short lands on the flexible cable.

4. Unlock the connector and remove the flexible cable of the optical pick-up unit.



8.4.2. Reinstalling traverse assembly

1. Install the flexible cable of the optical pick-up unit and lock it securely.
2. Remove the solder of each laser short land of the flexible cable.
Caution:
Remove the solders completely: otherwise the laser diode won't emit light.
3. Reinstall the spindle flexible cable and secure it to the specified pin of the unit.
4. Stuff the slack of the flexible cable into under the traverse assembly.



8.5. Optical pick-up unit

8.5.1. Removing optical pick-up unit



Caution to be taken when replacing optical pick-up unit.

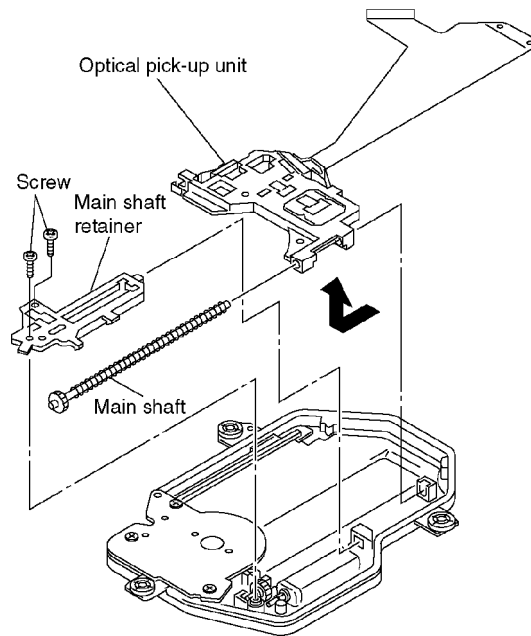
1. Take antistatic measures before servicing the optical pick-up unit.
2. Use a clean work bench which is free from dust or foreign matter.
3. Do not replace optical pick-ups other than necessary; otherwise they might not be properly adjusted.
4. When disassembling the traverse unit, use caution not to lose small parts such as screws and springs.

The traverse unit is a precision optical part. Do not touch the lens or give shock to the traverse.

Make sure that the traverse assembly removed before trying to remove the optical pick-up unit. When removing the traverse assembly, solder the two laser short lands on the flexible cable of the optical pick-up unit.

- 1. Remove the two screws securing the main shaft retainer.**
- 2. Remove the main shaft retainer.**
- 3. Slide the main shaft in the direction indicated by the arrow to**

remove the optical pick-up unit.



8.5.2. Reinstalling optical pick-up unit

The optical pick-up unit is factory adjusted. Do not touch the adjustment screw.

- 1. Reassemble the disassembled parts in the reverse order of disassembly.**
- 2. When reinstalling the traverse assembly on the main unit after installing the optical pick-up unit, make sure to remove the solder from each of the two laser short lands on the flexible cable.**

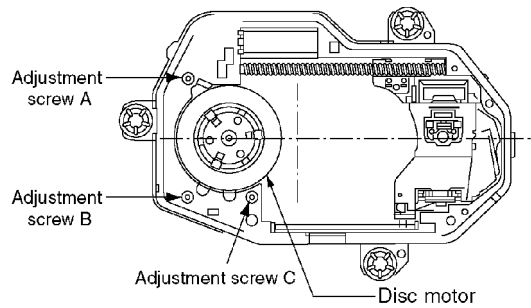
Caution:

- Remove the solders completely; otherwise the laser diode won't emit light.**
- After replacing the optical pick-up unit, check the quality of images played back and make optical adjustment.**

8.6. Disc motor

8.6.1. Removing disc motor

- 1. Remove the adjustment screws A, B, and C.**
- 2. Remove the disc motor.**

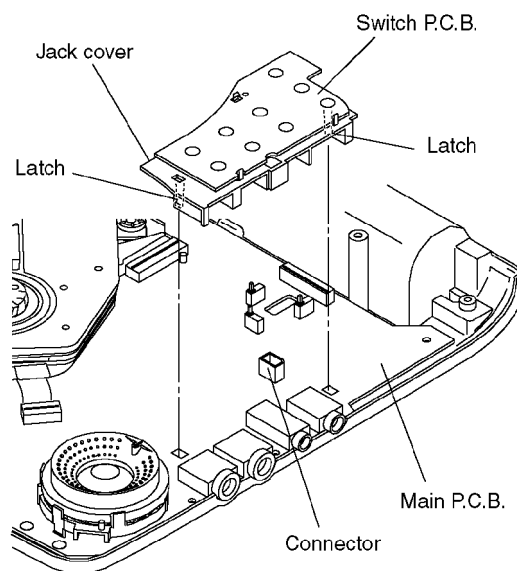


8.6.2. Caution to be taken when replacing the disc motor

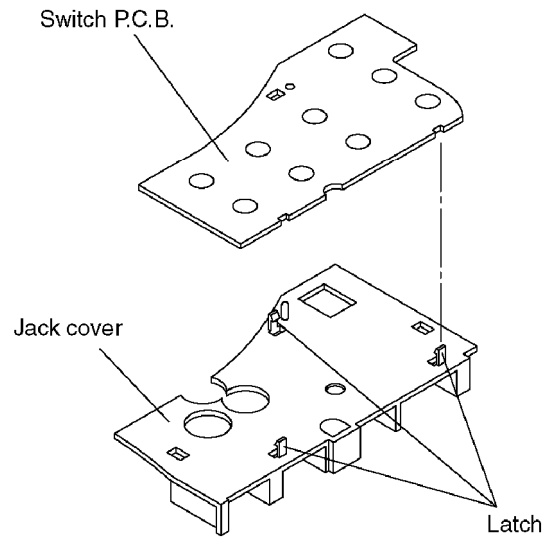
1. The mounting screws of the disc motor also serve as adjustment screws. When reinstalling the disc motor, first turn the screws A, B, and C as far as they go by usual force to secure them (do not overtighten).
 2. Back off the adjustment screws A and C two complete turns and secure them.
 3. Back off the adjustment screw B one and a half turns and secure them.
- This makes it nearly possible to play back disks and adjust the jitter.
- Thereafter, adjust the adjustment screws C and A as indicated.

8.7. Switch P.C.B.

1. Release the latches and remove the connector.

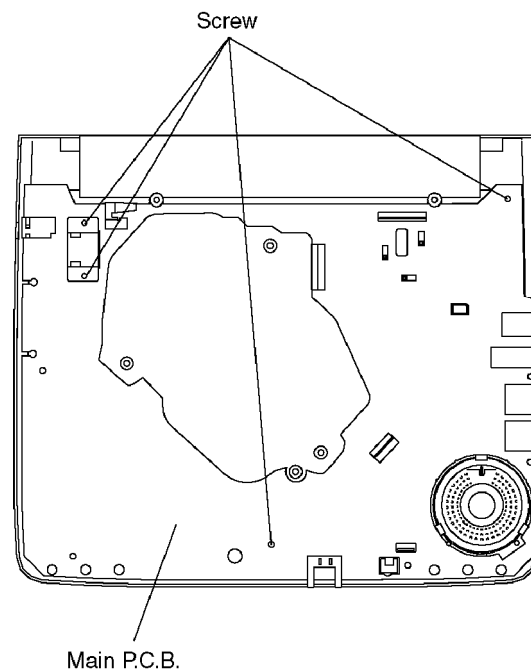


2. Release the latches and remove the switch P.C.B.



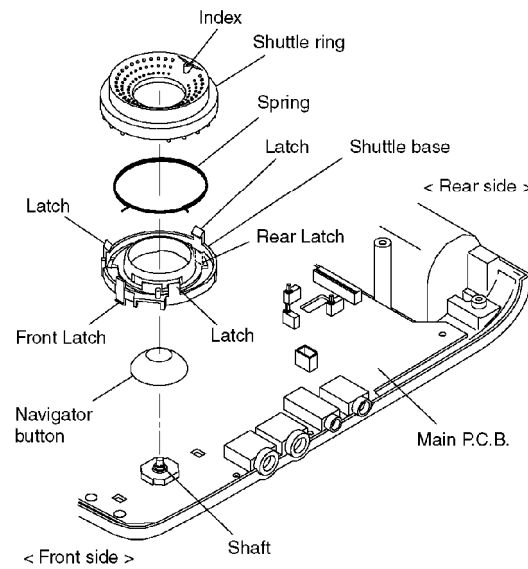
8.8. Main P.C.B.

1. Remove the 4 screws and remove the Main P.C.B.

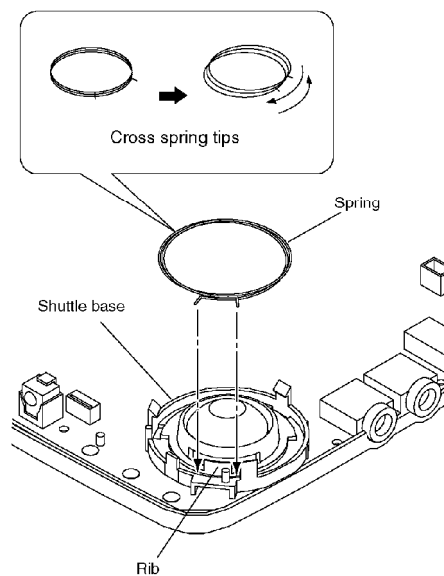


<Caution to be taken when reassembling shuttle base unit>

1. Insert the navigator button onto the main P.C.B. shaft. / (Make sure the letters "ENTER" is visible from the front side.)
2. Insert the front latch of the shuttle base into the main P.C.B. and then insert the rear latch into the main P.C.B..



3. Cross the spring tips in the direction indicated by the arrows and then insert the spring into the shuttle base as shown below.
4. Align the index of the shuttle ring with position of the rear latch and insert the shuttle ring into the inside of the latches of the shuttle base.
5. Move the shuttle ring 90° to the right and left, respectively, and remove your finger to make sure it returns to the center.

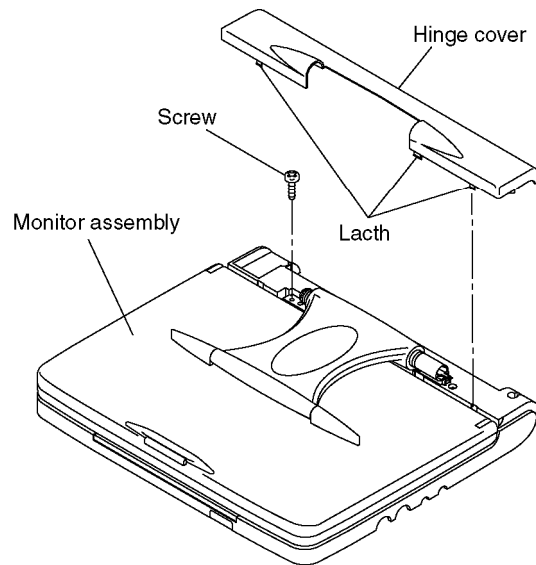


8.9. Monitor assembly



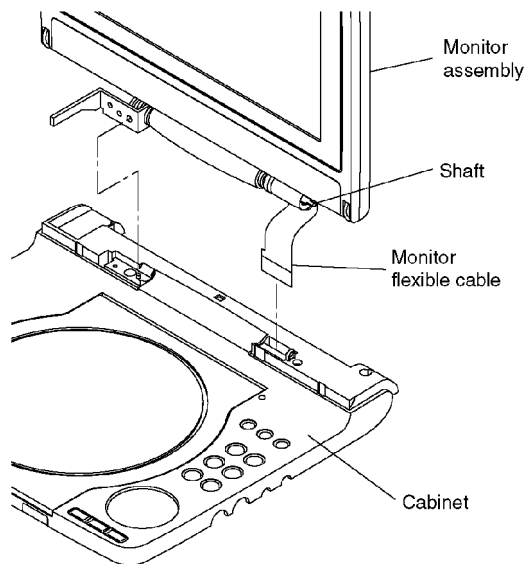
Take care not to get an electrical shock accident by touching the high-voltage part when checking for conduction after disassembly.
Do not give damage to the LCD surface.

1. Release the latches and remove the hinge cover.
2. Remove the screw and remove the monitor assembly.



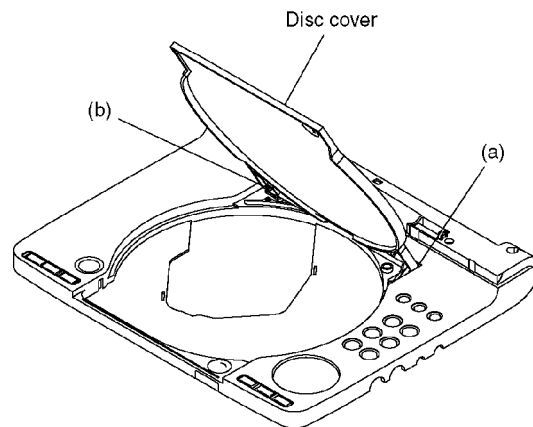
<Caution to be taken when installing monitor assembly>

1. Wind 1 turn of the monitor flexible cable around the shaft.
2. Install the monitor assembly on the cabinet.



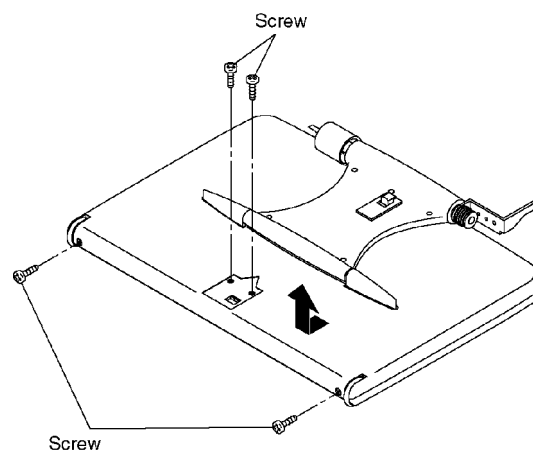
8.10. Disc cover

1. Remove the disc cover in order of (a) and (b).

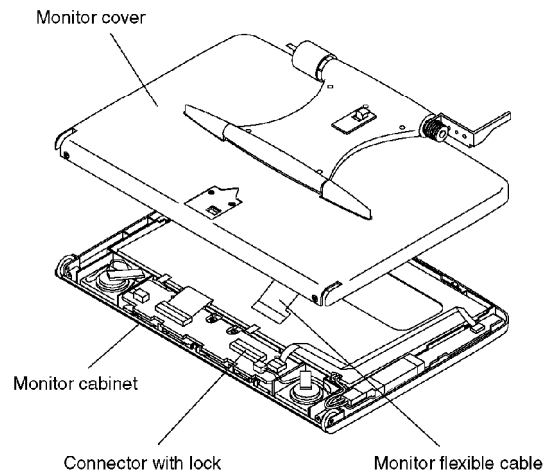


8.11. Monitor cover

1. Remove the 4 screws.
2. Remove the monitor cover into the direction of the arrow.

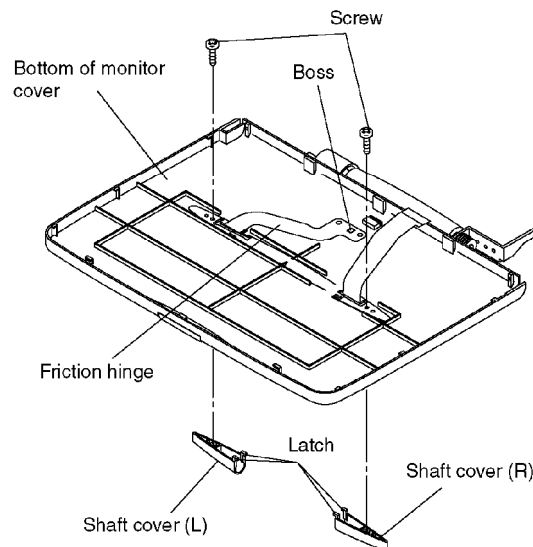


3. Unlock the connector and remove the monitor flexible cable.

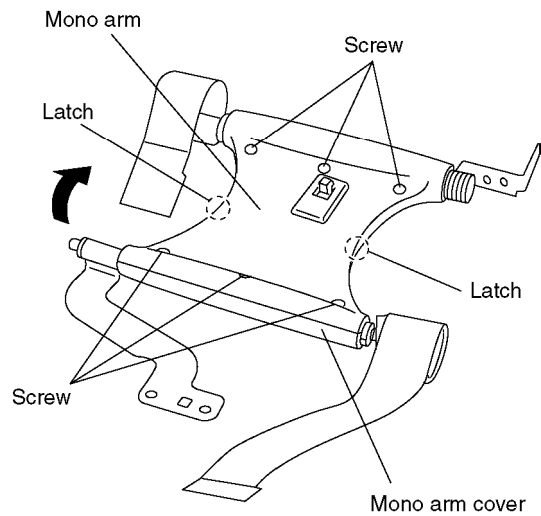


8.12. Mono arm

1. Remove the 2 screws.
2. Release the latches and remove the shaft covers.
3. Release the friction hinge from boss and remove the mono arm assembly.

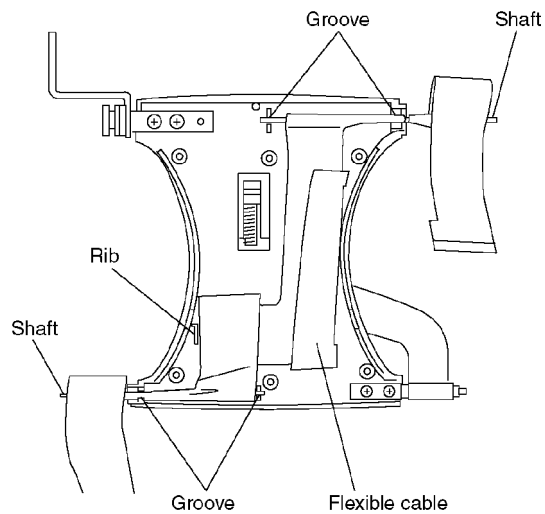


4. Remove the 5 screws.
5. Release the latches and remove the mono arm into the direction of the arrow.

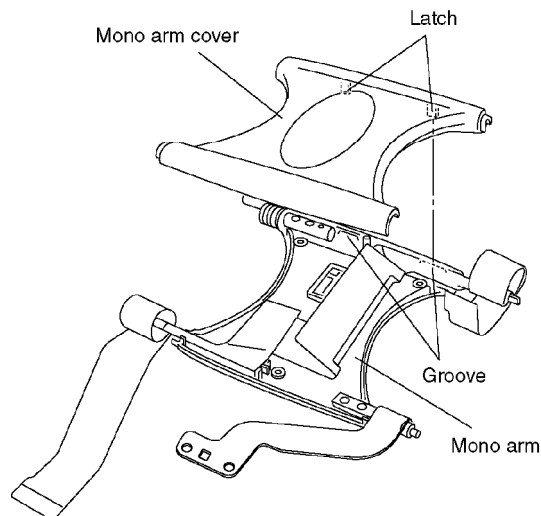


<Caution to be taken when installing mono arm>

- 1. Install the flexible cable along the Rib.**
- 2. Insert the shafts into the groove.**



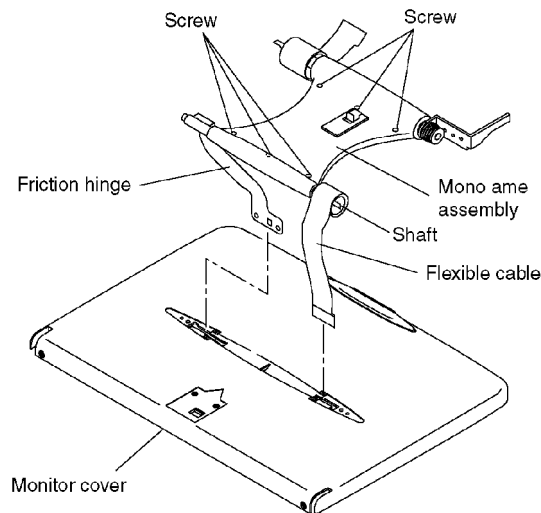
- 3. Hook the latches to groove.**
- 4. Install the mono arm cover.**



5. Tighten the 6 screws.

6. Wind 3 turns of the flexible cable around the shaft.

7. Pass the flexible cable and the friction hinge into the holes in the moitor cover.



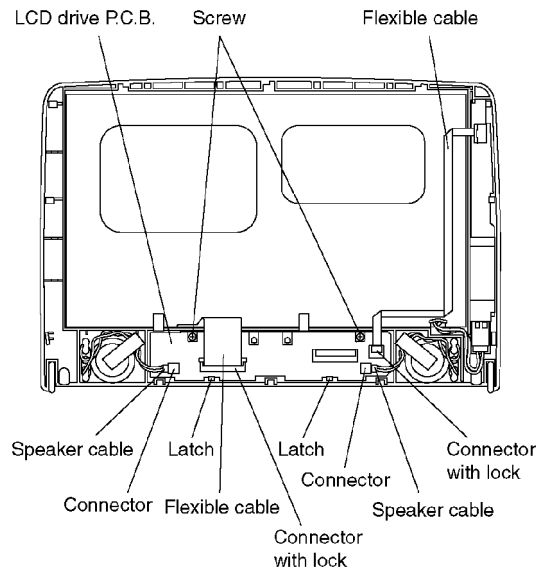
8.13. LCD drive P.C.B.

1. Unlock the connectors and remove the flexible cables.

2. Remove the speaker cables.

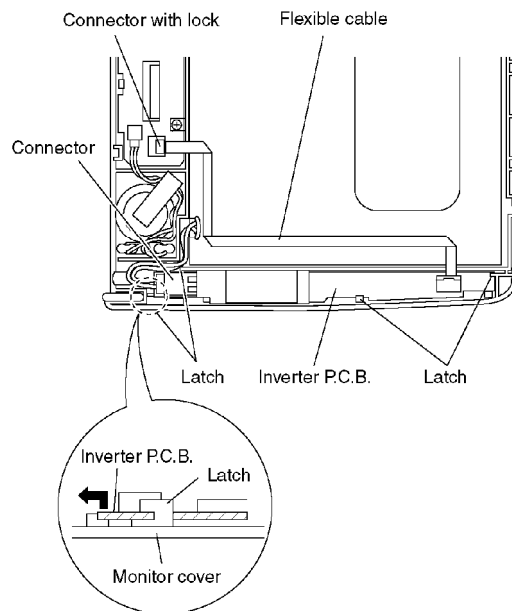
3. Remove the 2 screws.

4. Release the latches and remove the LCD drive P.C.B..



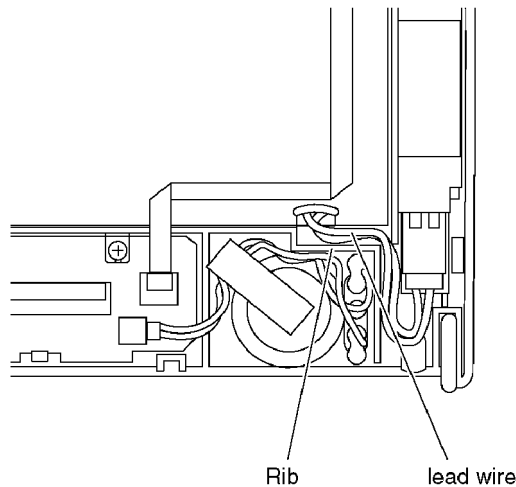
8.14. Inverter P.C.B.

1. Unlock the connector and remove the flexible cable.
2. Slide the inverter P.C.B. in the direction of the arrow to remove.
3. Remove the connector.



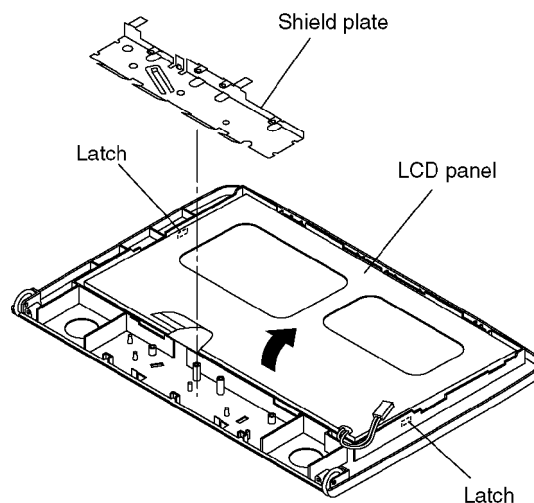
<Caution to be taken when reinstalling inverter P.C.B.>

1. Lay the lead wire along side of the Rib.



8.15. LCD panel

1. Remove the shield plate.
2. Release the latches and remove the LCD panel into the direction of the arrow.



8.16. Service position



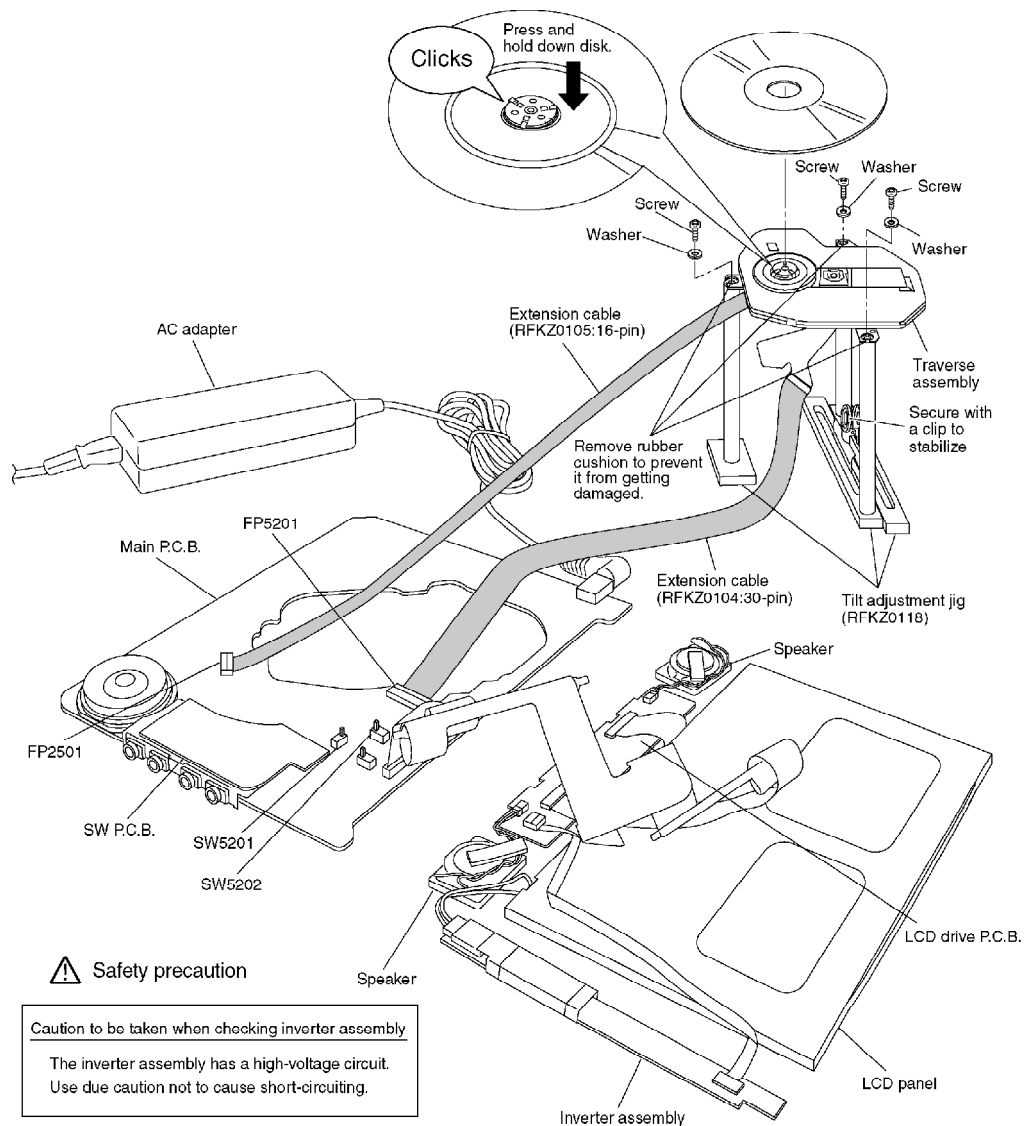
If you need to turn on the laser for any reason, such as for playback inspection, never look directly at the laser light.

8.16.1. Board checks

1. Connect the main P.C.B and the traverse assembly with an extension cable.
2. Install the traverse assembly to the tilt adjustment jig using three screws and three washers.

Caution:

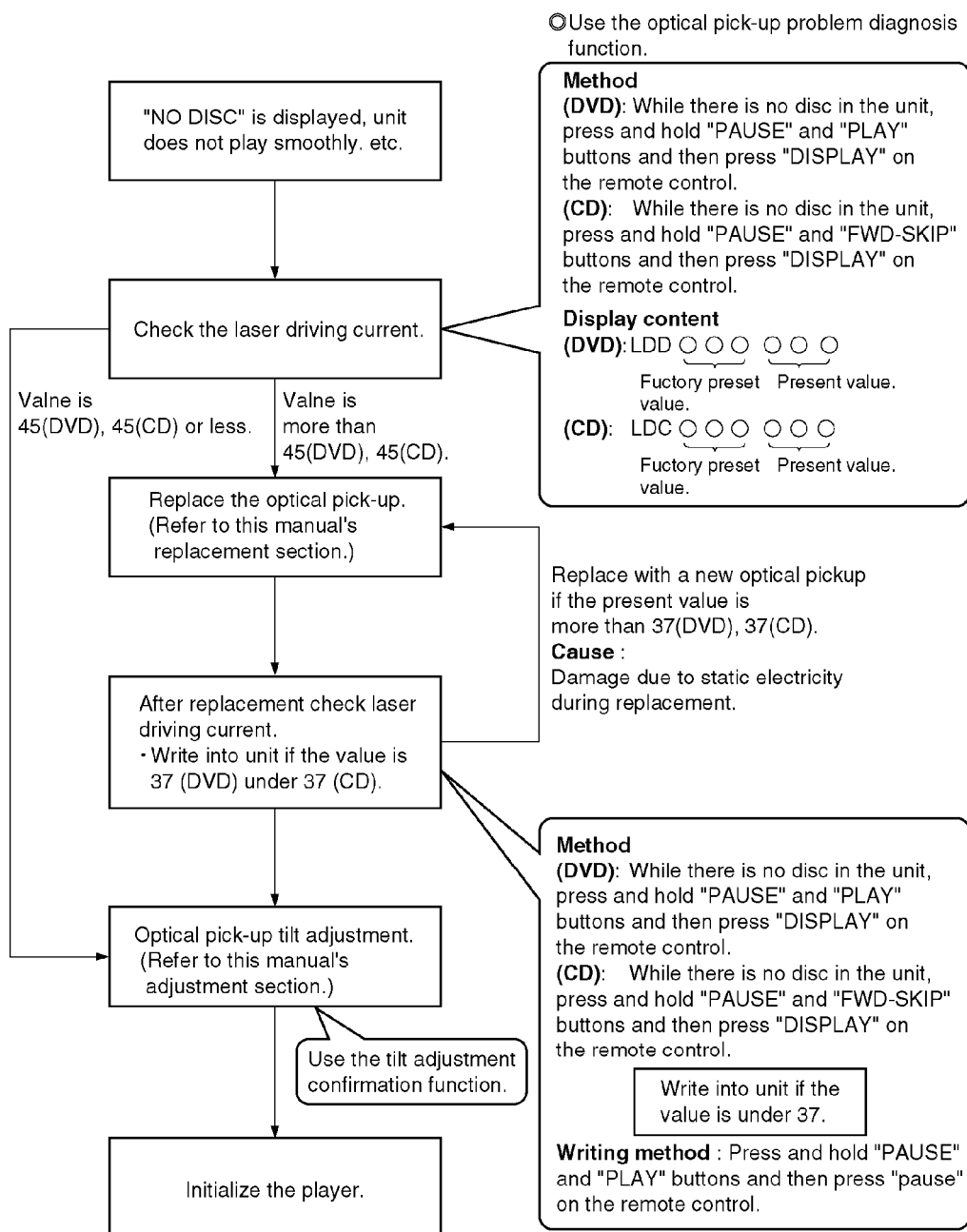
- Remove the rubber cushion from the traverse assembly to prevent it from getting damaged.
- 3. Install a disk on the traverse assembly.
 - Caution:**
 - Make sure the disk is securely installed on the disk motor.
- 4. Remove the main P.C.B., LCD drive P.C.B., inverter assembly., and LCD panel as shown below.
- 5. The disk cannot be played back with the disk cover removed. Press and hold down the SW5201 and SW5202. (Secure with cellulose tape.)



9. SELF-DIAGNOSIS FUNCTION AND SERVICE MODE

9.1. Optical Pickup Breakdown Diagnosis

As a new feature, this unit has an “optical pick-up problem diagnosis function” and “a tilt adjustment confirmation function” built in. Use the following procedure to efficiently determine the problem and adjust tilt. If "NO DISC" is displayed, before exchanging the optical pick-up, carry out problem diagnosis first. If the present laser driving current is over 55, the optical pick-up may need to be exchanged.



Note:

Carry out diagnosis within 3 minutes of turning the unit on. (The player's current can increase as it warms up, so turn the unit off and

allow it to cool down before diagnosis.)

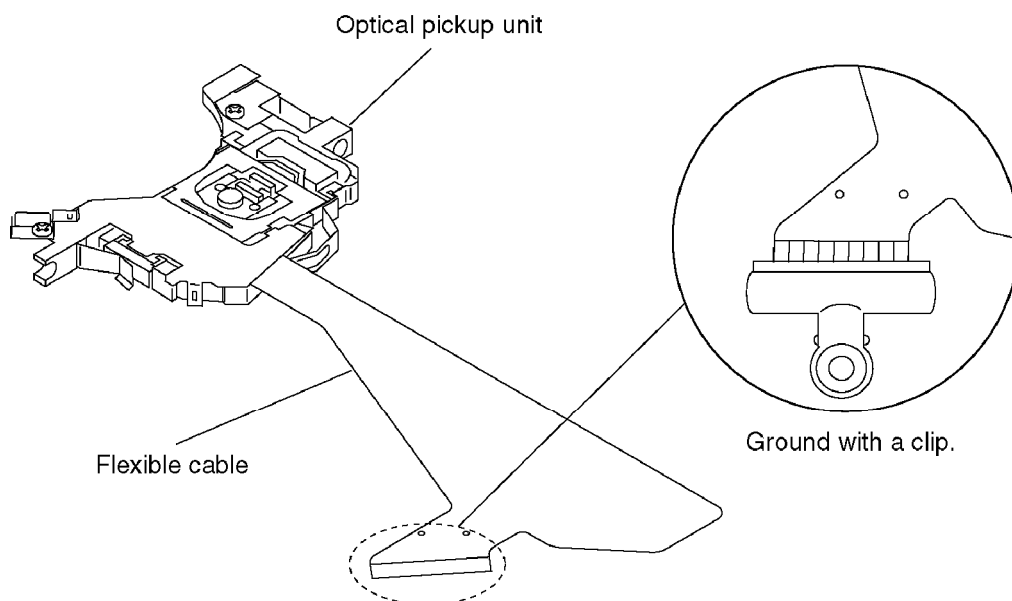
Cautions to be taken when replacing the optical pickup

The optical pickup may break down due to the static electricity of human body. Take proper protection measures against static electricity before repairing the parts around the optical pickup. (See the page describing the PREVENTION OF STATIC ELECTRICITY DISCHARGE.)

- 1. Do not touch the areas around the laser diode and actuator.**
- 2. Do not judge the laser diode with a tester. (The tester will be damaged easily.)**
- 3. It is recommended to use a destaticized soldering iron for short-circuiting or removing the laser diode. (Recommended soldering iron) HAKKO ESD Product**
- 4. Solder the land of the flexible cable in the optical pickup.**

Note:

- When using a soldering iron which is not destaticized, short-circuit the terminal face of the flexible case with a clip. After that, short-circuit the land.**
- After the repairing work is completed, remove the solder according to the correct procedure shown in this Technical Guide.**



9.2. UHF displays

Use the internal service mode for evaluation of malfunctions.

Display Method	Display	Diagnosis
Items displayed when in use	CHECK THE DISC	Focus error
	H01	Inner cover trouble
	H02	Spindle servo error
	H03	Traverse error
	H04	Tracking servo error
	H05	Seek error
Press the "0" button on the remote control while holding down the PAUSE and PLAY buttons on the player. The last error code generated is saved in the EEPROM	F0**	Disc format error
	F1**	Disc code error
	F2**	Decoder LSI error
	F5**	DSC
	F6**	ECC error
	F7**	Microcomputer error
	F8**	Microcomputer error

9.3. Service Mode Table 1

The service modes can be activated by pressing various button combination on the player and remote control unit.

Player buttons	Remote control unit buttons	Application	N
PAUSE / + / PLAY	0	Displaying the UHF display F _ _ _	Refer to 9.2. Self-Function Display)
	5	Jitter check, tilt adjustment *Display shows xx_yyyzz "xx" and "zz" shown to the right have nothing to do with the jitter value. "xx" is the error counter, while "zz" is the focus drive value. Referto section 11.4. for Optical Pickup Tilt Adjustment Procedure.	Refer to 11.4. Op Pickup T Adjustm
	6	Checking the region numbers and broadcast system	
	7	Checking the program version	Check th FLASH F program
	9	Lighting Confirmation Function of Display Tube	
	DISPLAY	Checking the laser drive current	Refer to 8.5. Opti Replace Procedu
	PAUSE	Writing the laser drive current value after replacing the optical pickup (do not use for anything other than optical pickup replacement)	

Player buttons	Remote control unit buttons	Application	
PAUSE BWD-SKIP PLAY	—	The user setting is returned to the state of the factory shipment.	Refer to 9.6. Initial DVD play

9.4. DVD Self Diagnostic Function-Error Code

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
	U, H error				
U11	Focus error				
H01	Tray loading error				
H02	Spindle servo error	(Spindle servo, DSC SP motor, CLV servo error)			
H03	Traverse servo error				
H04	Tracking servo error				
H05	Seek error				
H06	Power error	Cannot switch off the power because of the panel and system computer communication error			
H07	Spindle motor drive error				
	DSC related				
F500	DSC error	DSC stops in the occurrence of servo error (startup, focus error, etc)	OPU	DV2 (IC3001)	DV2 (IC3001)
F501	DSC not Ready	DSC-system computer communication error (Communication failure caused by idling of DSC)	DV2 (IC3001)	DV2 (IC3001)	
F502	DSC Time out error	Similar disposal as F500	OPU	DV2 (IC3001)	DV2 (IC3001)
F503	DSC communication Failure	Communication error (result error occurred although communication command was sent)	DV2 (IC3001)	DV2 (IC3001)	EEPROM (IC6351)
F505	DSC Attention error	Similar disposal as F500	OPU	DV2 (IC3001)	DV2 (IC3001)
F506	Invalid media	Disc is flipped over, TOC unreadable, incompatible disc	DISC	DV2 (IC3001)	DV2 (IC3001)
	ODC related				

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F600	Access failure to management information caused by demodulation error	Operation stopped because navigation data is not accessible caused by the demodulation defect	DV2 (IC3001)	DV2 (IC3001)	DV2 (IC3001)
F601	Indeterminate sector ID requested	Operation stopped caused by the request to access abnormal ID data	DV2 (IC3001)	DV2 (IC3001)	DV2 (IC3001)
F602	Access failure to LEAD-IN caused by demodulation error	LEAD IN data unreadable			
F603	Access failure to KEYDET caused by demodulation error	Access failure to CSS data of disc			
F610	ODC abnormality	No permission for command execution	DV2 (IC3001)		
F611	6626 QCODE don't read Error	Access failure to seek address in CD series	DV2 (IC3001)		
F612	No CRC OK for a specific time	Access failure to ID data in DVD series	DV2 (IC3001)		
F630	No reply to KEY DET enquiry	(for internal use only)			
F631	CPPM KEY DET is not available till the FILE terminal	(CPPM file system is unreadable caused by scratches)	DISC	CPPM	
F632	CPPM KEY DET is not available	Been revoked or falsified	DISC	EEPROM (IC6351)	CPPM (*1)
	Disc code				
F103	Illegal highlight Position	Big possibility of disc specification violation during highlight display	DISC		
	HIC Error				
F4FF	Force initialize failure (time out)		EEPROM (IC6351)	DV2 (IC3001)	DV2 (IC3001)
	Micro computer error				
F700	MBX overflow	When replying message to disc manager			
F701	Message command does not end	Next message is sent before replying to disc manager			

Error Code	Error Content	Additional error explanation	Defect 1	Defect 2	Defect 3
F702	Message command changes	Message is changed before it is sent as a reply to disc manager			
F880	Task number is not appropriate	Message coming from a non-existing task			
F890	Sending message when message is being sent to AV task	Sending message to AV task			
F891	Message couldn't be sent to AV task	Begin sending message to AV task			
F893	FROM falsification		FROM (IC6301)	DV2 (IC3001)	
F894	EEPROM abnormality		EEPROM (IC6351)	Serial / communication on lone	
F895	Language area abnormality	Firm version agreement check for factory preset setting failure prevention	FROM (IC6301)		
F896	No existence model	Firm version agreement check for factory preset setting failure prevention	FROM (IC6301)		
F897	Initialize is not completed	Initialize completion check for factory preset setting failure prevention			
F8A0	Message command is not appropriate	Begin sending message to AV task			

Note:

An error code will be canceled if a power supply is turned OFF.

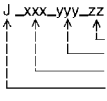
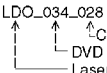
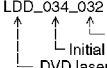

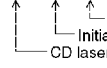
*1: CPPM is the copy guard function beforehand written in the disc for protection of copyrights.

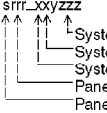

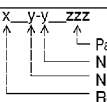
9.5. Last Error Code saved during NO PLAY

Error code	Error Content
F0BF	6) Cannot playback because physical layer is not recognizable
F0C0	8) DVD: Cannot playback because it is not DVD Video/Adio/VR
F0C1	9) DVD: Prohibited by the restricted region code
F0C2	A) DVD: PAL restricted playback
F0C3	B) DVD: Parental lock setting prohibits the playback of the entire title
F0C4	C) VCD: Prohibited because it is in PHOTO CD fromat
F0C5	VCD/CD: Prohibited because it is CDROM without CD-DA

9.6. Service mode table

Pressing various button combinations on the player and remote control unit can activate the service modes.

Item	Player mode and button combination	Function	Display	Cancellation method
Jitter check	In PLAY mode, press PAUSE and PLAY buttons on the player, and "5" button on the remote control unit.	Jitter check Jitter rate is measured and displayed. Measurement is repeatedly done in the cycle of one second. Read error counter starts from zero upon mode setting. When target block data failed to be read out, the counter advances by one increment. When the failure is caused by minor error, it may be corrected when retried to enable successful reading. In this case, the counter advances by one. When the error persists even after retry, the counter may jump by two or more.	 Jitter rate is shown in decimal notation to one place of decimal. Focus drive value is shown in hexadecimal notation.	Press STOP or OPEN button.
Error code check	In ** (no disc) mode, press PAUSE and PLAY buttons on the player, and "0" button on the remote control unit. * With pointing of cursor up and down on display, the panel controller switches serial number of history and sends out the command accordingly.	Error code check The latest error code stored in EEPROM is displayed.	Error code (play_err) is expressed in the following convention. Error code = 0 x DAXX is expressed: → nn UXX Error code = 0 x DBXX is expressed: → nn HXX Error code = 0 x DXXX is expressed: → nn FXXX Error code = 0 x 0000 is expressed: → nn F--- * "nn" denotes the serial number of history.	Cancelled automatically 5 seconds later.
Initial setting of laser drive current	In STOP (no disc) mode, press PAUSE and PLAY buttons on the player, and PAUSE button on the remote control unit.	Initial setting of laser drive current Initial current value for each of DVD laser and CD laser is separately saved in EEPROM.	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and 28mA for DVD laser and CD laser respectively when the laser is switched on.	Cancelled automatically 5 seconds later.
DVD laser drive current measurement	In STOP (no disc) mode, press PAUSE and PLAY buttons on the player, and DISPLAY button on the remote control unit.	DVD laser drive current measurement DVD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, DVD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 34mA and the measured value is 32mA.	Cancelled automatically 5 seconds later.
ADSC internal RAM data check	In ** (no disc) mode, press PAUSE and PLAY buttons on the player, and RETURN button on the remote control unit.	ADSC internal RAM data check ADSC internal RAM data is read out and displayed. Change the address with CLEAR key operation to show the data for 11 addresses.	 The value is shown in hexadecimal notation. The above example shows the data in ADSC address DFAh is 6901h.	Press STOP or OPEN button.
CD laser drive current measurement	In STOP (no disc) mode, press PAUSE and FWD-SKIP buttons on the player, and DISPLAY button on the remote control unit.	CD laser drive current measurement CD laser drive current is measured and the result is displayed together with the initial value stored in EEPROM. After the measurement, CD laser emission is kept on. It is turned off when POWER key is switched off. (It is also turned off when the primary power is switched off.)	 The value denotes the current in decimal notation. The above example shows the initial current is 28mA and the measured value is 26mA.	Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Version display	In STOP (no disc) mode, press PAUSE and PLAY buttons on the player, and "7" button on the remote control unit.	Version display		Cancelled automatically 5 seconds later.
Lighting of display tube	In STOP (no disc) mode, press PAUSE and PLAY buttons on the player, and "9" button on the remote control unit.	Lighting of display tube		Press PAUSE and PLAY buttons on the player, and "9" button on the remote control unit.
Initialization	In STOP (no disc) mode, press PAUSE, BWD-SKIP and PLAY buttons on the player for 3 seconds or longer.	Initialization User settings are cancelled and player is initialized to factory setting.	Initialized	
Region display	In STOP (no disc) mode, press PAUSE and PLAY buttons on the player, and "6" button on the remote control unit.	Region display		Cancelled automatically 5 seconds later.

Item	Player mode and button combination	Function	Display	Cancellation method
Timer 1 check	In STOP (no disc) mode, press PAUSE and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 check Laser operation timer Operation time is measured separately for DVD laser and CD laser.	T1_1234_5678 Shown to the left is DVD laser time, and to the right CD laser time. Time is shown in 4 digits of decimal notation in a unit of 10 hours. "0000" will follow "9999".	Cancelled automatically 5 seconds later.
Timer 1 reset	While displaying Timer 1 data, press STOP and FWD-SKIP buttons on the player, and "5" button on the remote control unit.	Timer 1 reset Laser operation timer Operation time of both DVD laser and CD laser is reset all at once.	T1_0000_0000	Cancelled automatically 5 seconds later.
Timer 2 check	In STOP (no disc) mode, press PAUSE and FWD-SKIP buttons on the player, and "6" button on the remote control unit.	Timer 2 check Spindle motor operation timer	T2_123456 Time is shown in 6 digits of decimal notation in a unit of 10 hours. "000000" will follow "999999".	Cancelled automatically 5 seconds later.
Timer 2 reset	While displaying Timer 2 data, press STOP and FWD-SKIP buttons on the player and "6" button on the remote control unit.	Timer 2 reset Spindle motor operation timer	T2_000000	Cancelled automatically 5 seconds later.

9.7. Handling After Completing Repairs

Use the following procedure after completing repairs.

9.8. Lens cleaning

When cleaning the lens, use the lens cleaner which product part No. SZZP1038C.

10. SERVICE PRECAUTIONS

10.1. Recovery after the dvd player is repaired

- When FROM or main P.C.B. is replaced, carry out the recovery processing to optimize the drive.

Playback the recovery disk to process the recovery automatically.

- Recovery disc (Product number: RFKZD03R004)

- Performing recovery

1. Load the recovery disc RFKZD03R004 on to the player and run it.
2. Recovery is performed automatically. When it is finished, a message appears on the screen.
3. Remove the recovery disc.
4. Turn off the power.

Note:

This unit requires no initialization process carried out after the traditional DVD players were repaired.

When the recovery measures are taken, the customer setting will return to the factory setting as same as the procedure described in item of "Initialization" in 9.6. is carried out. Write down the contents of the setting before recovery processing, and reset the player.

10.2. Firmware version-up of the DVD player

- The firmware of the DVD player may be renewed to improve the quality including operationability and playerbility to the

substandard discs.processing to optimize the drive.

The recovery disc has also firmware version-up.

- After version-up, recovery processing is executed automatically.
- Part number of the recovery disc for version-up will be noticed when it is supplied.
- Updating firmware
 1. Load the recovery disc that is supplied to the player and run it.
 2. Firmware version of the player is automatically checked.
Appropriate message appears whenever necessary.
 3. Using remote controller's cursor key, select whether version updating is to be done or not. (Selection of Yes/No)
 4. a. If Yes is selected, version updating is performed.
b. If No is selected, only recovery is performed.
 5. a. When updating is finished, remove the disc according to the message appearing on the screen.
b. Remove the disc according to the message appearing on the screen.
 6. Turn off the power.

Note:

If the AC power supply is shut out during version-up due to a power failure, the version-up is improperly carried out.

In such a case, replace the FROM and carry out the version-up again.

11. ADJUSTMENT PROCEDURES

<Caution>

Be sure to take static electricity countermeasures before adjusting the optical system. Adjust the optical systems according to the prescribed procedure.

11.1. Service Tools and Equipment

Application	Name	Number
Tilt adjustment	DVD test disc	DVDT-S15 or DVDT-S01
Inspection	Extension cable (Traverse ass'y to main P.C.B.)	RFKZ0104 (30Pin)
	Extension cable (Traverse ass'y to main P.C.B.)	RFKZ0105 (16Pin)
	Tilt adj. jig	RFKZ0118
Others	Screw lock	RZZ0L01
	Grease	JGS0101
	Lubricating oil	RFKXGUD24
Confirmation	CD test disc	PVCD-K06 or any other commercially available disc
	VCD test disc	PVCD-K06 or any other commercially available disc
	Recovery disc	RFKZD03R004

11.2. Important points in adjustment

11.2.1. Important points in optical adjustment

- Optical pickup tilt adjustment is needed after replacement of the following components.

1. Optical pickup unit
2. Disc motor
3. Traverse motor
4. Optical pickup peripheral parts (such as rail)

Notes

Adjustment is generally unnecessary after replacing other parts of the traverse unit. However, make adjustment if there is a noticeable degradation in picture quality.

Optical adjustments cannot be made inside the optical pickup.

11.2.2. Important points in electrical adjustment

- Follow the adjustment procedures described in this Manual.

11.3. Storing and Handling Test Discs

–Surface precision is vital for DVD test discs. Be sure to store and handle them carefully.

1. Do not place discs directly onto the workbench, etc., after use.
2. Handle discs carefully in order to maintain their flatness. Place them into their case after use and store them vertically. Store discs in a place where they are not exposed to direct sunlight or air from air conditioners.
3. Accurate adjustment will not be possible if the disc is warped when placed on a surface made of glass, etc. If this happens, use a new disc to make optical adjustments.
4. If adjustment is done using a warped disc, the adjustment will be incorrect and some discs will not be playable.

11.4. Optical adjustment

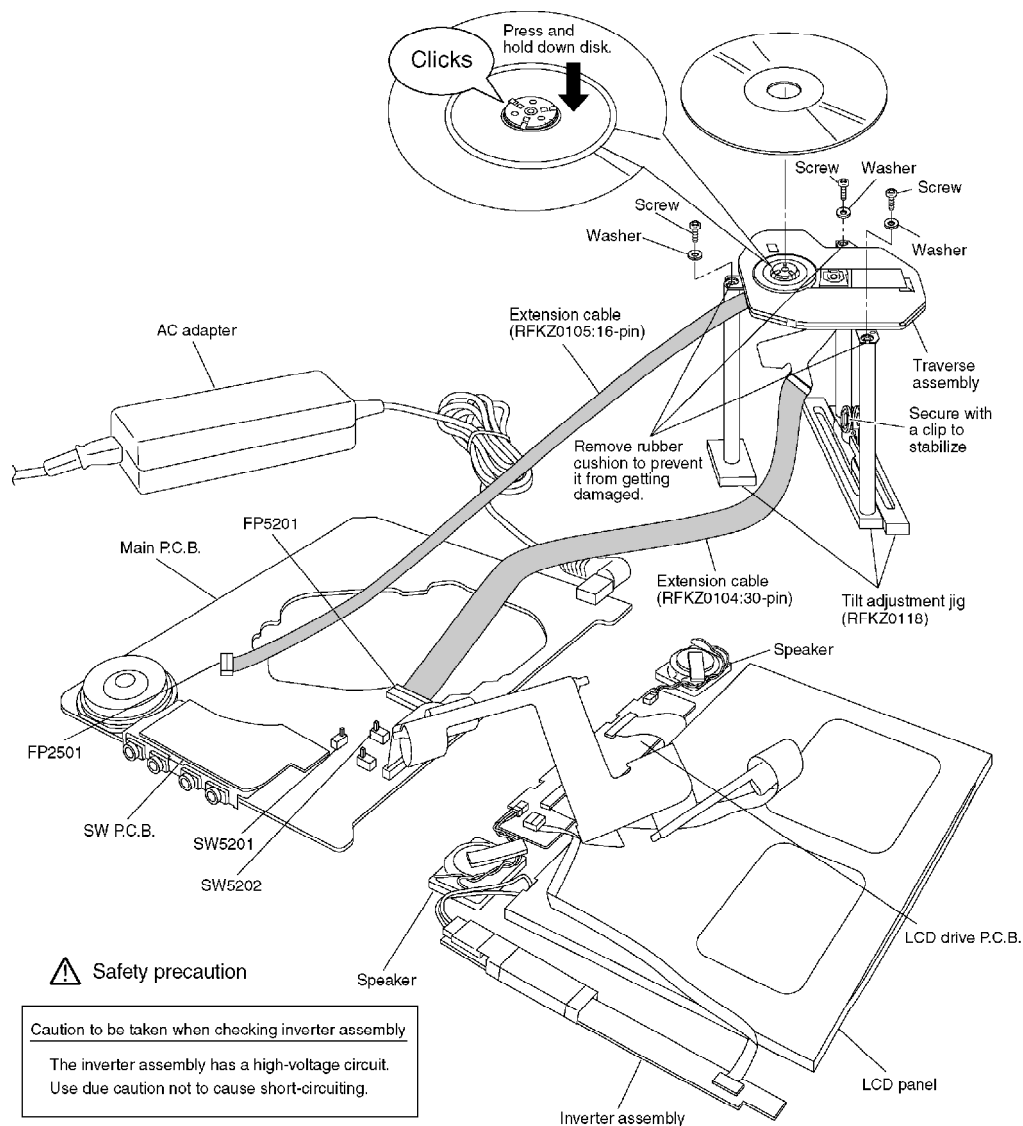
11.4.1. Optical pick gate adjustment

Measurement point	Adjustment point	Mode	Disc
-----	Tangential adjustment screw (Adjustment screw A) Radial tilt adjustment screw (Adjustment screw B)	Tracking servo "ON" Tracking servo "ON"	DVDT-S01/S15
Measuring apparatus		Adjustment value	
None (Use the service indication on the main unit)		Adjust the jitter value to the minimum level.	

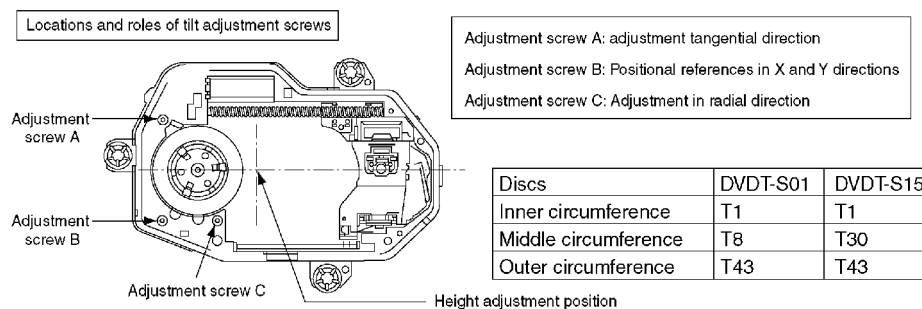
Remove the solder shorts before trying to make the adjustment.

11.4.1.1. Preparations

1. Connect the main P.C.B. to the traverse ass'y with the extension cable.
2. Install the traverse ass'y to the tilt adjustment jig with three screws and three washers.
Caution
Remove the rubber cushion of the traverse ass'y.
3. Install the traverse ass'y to the disc.
Caution
Make sure the disc is installed on the disc motor securely.
4. Disassemble the Main P.C.B., LCD drive P.C.B., Inverter assembly. and LCD panel as shown in figure below.
5. The disc cannot be played back with the Disc cover attached.
Press and hold down the SW5201 and SW5202 (Secure with cellulose tape)

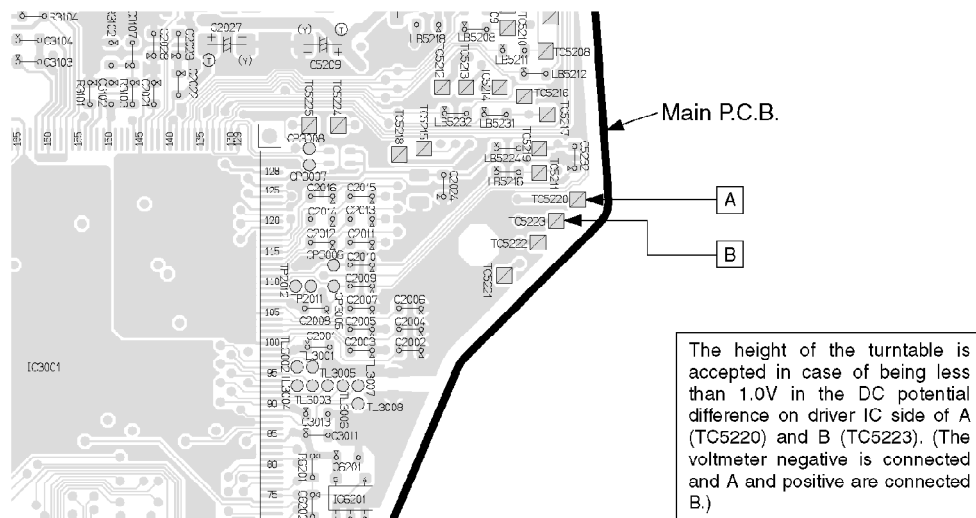


11.4.1.2. Adjustment



1. Play back the disc (DVDT-S01/S15) and make sure the RF signal is outputted.
2. Play back the areas within a radius of 40 ± 1 mm of the disc

- (middle circumference).
3. Turn the adjustment screw C to minimize the jitter value in the radial direction.
(*Once turn the screw to the full position and then back off. You should finish tightening in the tightening direction.)
 4. Turn the adjustment screw A to minimize the jitter value in the tangential direction.
(*Once turn the screw to the full position and then back off. You should finish tightening in the tightening direction.)
 5. DISC height measurement (Measure the middle of the deflection of the disc and motor surface.)



***If the measured height is out of range, adjust to the specified value using the adjustment screws A, B, and C (by the same angle).**

11.4.1.3. Checking after adjustment

Play back the test disc and ordinary discs to make sure that there is not any deterioration of image quality or missing of sound at the inner, middle, and outer circumferences.

11.5. Electrical adjustment (LCD)

[How to enter into the LCD panel adjustment mode]

Play back the specified video signal (10 steps, color bar signal).

Press and hold down "Back skip" and "Pause" of the main unit at the same time while pressing "Menu" on the remote control unit.

[The DVD player is now in the FT02 mode]

Press the "Forward skip button twice to enter into the FT04 mode (LCD panel adjustment mode).

Press the "Playback" button to play back the signal which has been played back before stopping and then, press the "Pause (still) button.

[How to exit to normal mode]

(Exit the F4 mode)





1. Turn off the primary power supply (Remove the DC power supply).

Turn on the power supply. Press the "Stop" to stop the system.





Press "Cancel" on the remote control unit (The Cancel key is enabled only when the system is stopped.)

- Whenever the LCD panel is replaced, make the following checks and adjustments.
- Press the "Enter" key and fix the settings.
- When the EEPROM" (IC8401) of the LCD drive P.C.B. is replaced, call up the LCD drive P.C.B. adjustment mode (FT04) and execute the AUDIO on the remove control unit and then check the condition of the screen. Make adjustments as necessary.




11.5.1. Adjusting VCO oscillation frequency





Adjustment is required when	Check point	
The synchronization of the LCD screen is irregular after any VCO-related circuit part is replaced	TP8201	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use "1" on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press "  " and "  " buttons on remote controller, set the right side number to "71".	-----	

11.5.2. Adjusting DC offset of impressed voltage




Adjustment is required when	Check point	
Noise such as horizontal stripes is found on the screen.	TL8401	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “3” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the right side number to “AI”.	10step monochrome	





11.5.3. Adjusting white balance red/subcontrast red

Adjustment is required when	Check point	
Remarkable deviation in white balance is found	TL8602	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “6” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control  
Details of adjustment	Input video signal	





<p>(White balance)</p> <p>Press “” and “” buttons on remote controller, set the number of center to “80”.</p>	10step monochrome
<p>(Sub contrast)</p> <p>Press “” and “” buttons on remote controller, set the right side number to “7E”.</p>	

11.5.4. Adjusting whitebalance blue/subcontrast blue





Adjustment is required when	Check point	
Remarkable deviation in white balance is found	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “7” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control  
Details of adjustment	Input video signal	

<p>(White balance)</p> <p>Press “” and “” buttons on remote controller, set the number of center to “71”.</p>	10step monochrome
<p>(Sub contrast)</p> <p>Press “” and “” buttons on remote controller, set the right side number to “84”.</p>	





11.5.5. Adjusting amplitude of impressed voltage

Adjustment is required when	Check point	
-----	TL8401	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “2” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the right side number to “15”.	10step monochrome	





11.5.6. Adjusting pedestal

Adjustment is required when	Check point	
-----	TL8603	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “4” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the number of center to “91”.	10step monochrome	





11.5.7. Adjusting contrast

Adjustment is required when	Check point	
-----	TL8603	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “4” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the right side number to “71”.	10step monochrome	

11.5.8. Adjusting TINT

Adjustment is required when	Check point	
-----	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “5” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the number of center to “75”.	75% color bar	

11.5.9. Adjusting color

Adjustment is required when	Check point	
-----	TL8604	
Adjustment procedure	Adjustment UP	Adjustment DOWN
Use “5” on remote control unit.	DVD player/ remote control unit 	DVD player/ remote control 
Details of adjustment	Input video signal	
Press “  ” and “  ” buttons on remote controller, set the right number to “81”.	75% color bar	

11.6. Electrical check (Video output check)

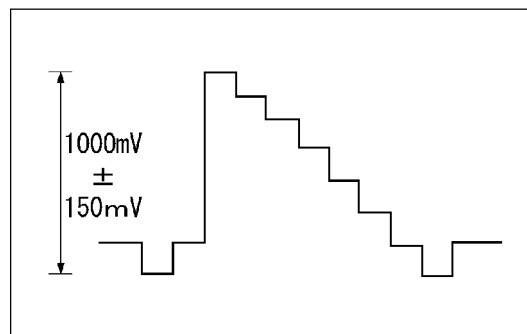
11.6.1. Checking video output (brightness signal)

Check point	Mode	Disc
S video output terminal	Color bar playback (75%)	DVDT-S20
Measuring apparatus	Check value	
Oscilloscope	1000 mV \pm 150 mV	

Purpose: Keep the interchangeability of video signal output

1. Terminate the brightness signal (Y) of the S video output terminal with 75 Ω and input into the oscilloscope.
2. Select color bar 75% from the titles of the DVD test disc and play back.
3. Check that the brightness signal output (including sink chip) is the following value:

Check value = 1000mV \pm 150mV



11.6.2. Checking video output (color signal)

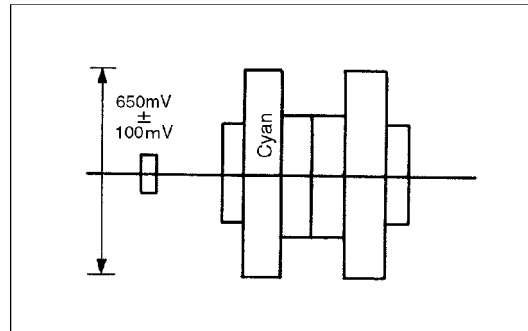
Check point	Mode	Disc
S video output terminal	Color bar playback (75%)	DVDT-S20
Measuring apparatus	Check value	
Oscilloscope	650 mV \pm 100 mV	

Purpose: Keep the interchangeability of the video signal output

1. Terminate the color signal (C) of the S video output terminal with 75 Ω and input into the oscilloscope.
2. Select color bar 75% from the titles of the DVD test disc and play back.

3. Check that the coor signal output (cyan color area) is the following value:

Check value=650mV±100mV



12. Abbreviations

INITIAL/LOGO		ABBREVIATIONS
A	A0~UP	ADDRESS
	ACLK	AUDIO CLOCK
	AD0~UP	ADDRESS BUS
	ADATA	AUDIO PES PACKET DATA
	ALE	ADDRESS LATCH ENABLE
	AMUTE	AUDIO MUTE
	AREQ	AUDIO PES PACKET REQUEST
	ARF	AUDIO RF
	ASI	SERVO AMP INVERTED INPUT
	ASO	SERVO AMPOUTPUT
	ASYNC	AUDIO WORD DISTINCTION SYNC
B	BCK	BIT CLOCK (PCM)
	BCKIN	BIT CLOCK INPUT
	BDO	BLACK DROP OUT
	BLKCK	SUB CODE BLOCK CLOCK
	BOTTOM	CAP. FOR BOTTOM HOLD
	BYP	BYPATH
	BYTCK	BYTE CLOCK

INITIAL/LOGO		ABBREVIATIONS
C	CAV	CONSTANT ANGULAR
	CBDO	VELOCITY
	CD	CAP. BLACK DROP OUT
	CDSCK	COMPACT DISC
	CDSRDATA	CD SERIAL DATA CLOCK
		CD SERIAL DATA
	CDRF	CD RF (EFM) SIGNAL
	CDV	COMPACT DISC-VIDEO
	CHNDATA	CHANNEL DATA
	CKSL	SYSTEM CLOCKSELECT
	CLV	CONSTANT LINEAR VELOCITY
	COFTR	CAP. OFF TRACK
	CPA	CPU ADDRESS
	CPCS	CPU CHIP SELECT
	CPDT	CPU DATA
	CPH1~3	CLOCK PULSE SOURCE DRIVE
	CPUADR	CPU ADDRESS LATCH
	CPUADT	CPU ADDRESS DATA BUS
	CPUIRQ	CPU INTERRUPT REQUEST
	CPRD	CPU READ ENABLE
	CPV	GATEDRIVER CLOCK PULSE
	CPWR	CPU WRITE ENABLE
	CS	CHIP SELECT
	CSYNCIN	COMPOSITE SYNC IN
	CSYNCOUT	COMPOSITE SYNC OUT
D	DACCK	D/A CONVERTER CLOCK
	DEEMP	DEEMPHASIS BIT ON/OFF
	DEMPH	DEEMPHASIS SWITCHING
	DIG0~UP	FL DIGIT OUTPUT
	DIN	DATA INPUT
	DMSRCK	DM SERIAL DATA READ CLOCK
	DMUTE	
	DO	DIGITAL MUTE CONTROL
	DOUT0~UP	DROP OUT
		DATAOUTPUT
	DRF	DATA SLICE RF (BIAS)
	DRPOUT	DROP OUT SIGNAL
	DREQ	DATA REQUEST
	DRESP	DATA RESPONSE
	DSC	DIGITAL SERVO CONTROLLER
	DSLIF	DATA SLICE LOOP FILTER
	DVD	DIGITAL VIDEO DISC

INITIAL/LOGO		ABBREVIATIONS
E	EC	ERROR TORQUE CONTROL
	ECR	ERROR TORQUE CONTROL REFERENCE
	ENCSEL	ENCODER SELECT
	ETMCLK	EXTERNAL M CLOCK (81MHz/40.5MHz)
	ETSCLK	EXTERNAL S CLOCK (54MHz)
F	FBAL	FOCUS BALANCE
	FCLK	FRAME CLOCK
	FE	FOCUS ERROR
	FFI	FOCUS ERROR AMP INVERTED INPUT
	FEO	FOCUS ERROR AMP OUTPUT
	FG	FREQUENCY GENERATOR
	FSC	FREQUENCY SUB CARRIER FS (384 OVER SAMPLING) CLOCK
G	FSCK	
G	GND	COMMON GROUNDING (EARTH)
H	HA0~UP	HOST ADDRESS
	HD0~UP	HOST DATA
	HINT	HOST INTERRUPT
	HRXW	HOST READ/WRITE
I	IECOUT	IEC958 FORMAT DATA OUTPUT
	IPFRAG	
	IREF	INTERPOLATION FLAG
	ISEL	I (CURRENT) REFERENCE INTERFACE MODE SELECT
L	LDON	LASER DIODE CONTROL
	LPC	LASER POWER CONTROL
	LRCK	L CH/R CH DISTINCTION CLOCK
M	MA0~UP	MEMORY ADDRESS
	MCK	MEMORY CLOCK
	MCKI	MEMORY CLOCK INPUT
	MCLK	MEMORY SERIAL COMMAND CLOCK
	MDATA	CLOCK
	MDQ0~UP	MEMORY SERIAL COMMAND DATA
	MDQM	
	MLD	MEMORY DATA INPUT/OUTPUT
	MPEG	MEMORY DATA I/O MASK
		MEMORYSERIAL COMMAND LOAD
		MOVING PICTURE EXPERTS GROUP

		GROUP
INITIAL/LOGO	ABBREVIATIONS	
O	ODC	OPTICAL DISC CONTROLLER
	OEH	SOURCE DRIVER OUTPUT
	OEV 1, 2	ENABLE
	OFTR	GATE DRIVER OUTPUT
	OSCI	ENABLE
	OSCO	OFF TRACKING
	OSD	OSCILLATOR INPUT OSCILLATOR OUTPUT ON SCREEN DISPLAY
P	P1~UP	PORT
	PCD	CD TRACKING PHASE
	PCK	DIFFERENCE
	PDVD	PLL CLOCK
	PEAK	DVD TRACKING PHASE
	PLLCLK	DIFFERENCE
	PLLOK	CAP. FOR PEAK HOLD
	PWMCTL	CHANNEL PLL CLOCK
	PWMDA	PLL LOCK
	PWMOA, B	PWM OUTPUT CONTROL
		PULSE WAVE MOTOR DRIVEA PULSE WAVE MOTOR OUT A, B

INITIAL/LOGO	ABBREVIATIONS	
R	RE	READ ENABLE
	RFENV	RF ENVELOPE
	RFO	RF PHASE DIFFERENCE
	RS	OUTPUT
	RSEL	(CD-ROM) REGISTER SELECT
	RST	RF POLARITY SELECT
	RSV	RESET RESERVE

INITIAL/LOGO		ABBREVIATIONS
S	SBI0, 1	SERIAL DATA INPUT
	SBO0	SERIAL DATA OUTPUT
	SBT0, 1	SERIAL CLOCK
	SCK	SERIAL DATA CLOCK
	SCKR	AUDIO SERIAL CLOCK
	SCL	RECEIVER
	SCLK	SERIAL CLOCK
	SDA	SERIAL CLOCK
	SEG0~UP	SERIAL DATA
	SELCLK	FL SEGMENT OUTPUT
	SEN	SELECTCLOCK
	SIN1, 2	SERIAL PORT ENABLE
	SOUT1, 2	SERIAL DATA IN
	SPDI	SERIAL DATA OUT
	SPDO	SERIAL PORT DATA INPUT
	SPEN	SERIAL PORT DATA OUTPUT
	SPRCLK	SERIAL PORT R/W ENABLE
	SPWCLK	SERIAL PORT READ CLOCK
	SQCK	SERIAL PORT WRITE CLOCK
	SQCX	SUB CODE Q CLOCK
	SRDATA	SUBCODE Q DATA READ
	SRMADR	CLOCK
	SRMDT0~7	SERIAL DATA
		SRAM ADDRESS BUS
	SS	SRAM DATA BUS 0~7
	STAT	START/STOP
	STCLK	STATUS
	STD0~UP	STREAM DATA CLOCK
	STENABLE	STREAM DATA
		STREAM DATA INPUT ENABLE
	STH	SOURCE START PULSE
	STSEL	STREAM DATA
	STV	POLARITYSELECT
	STVALID	GATE DRIVER SCAN START
	SUBC	PULSE
	SBCK	STREAM DATA VALIDITY
	SUBQ	SUB CODE SERIAL
	SYSCLK	SUB CODE CLOCK
		SUB CODE Q DATA
		SYSTEM CLOCK

INITIAL/LOGO		ABBREVIATIONS
T	TE	TRACKING ERROR
	TIBAL	BALANCE CONTROL
	TID	BALANCE OUTPUT 1
	TIN	BALANCE INPUT
	TIP	BALANCE INPUT
	TIS	BALANCE OUTPUT 2
	TPSN	OP AMP INPUT
	TPSO	OP AMP OUTPUT
	TPSP	OP AMP INVERTED INPUT
	TRCRS	TRACK CROSS SIGNAL
	TRON	TRACKING ON
	TRSON	TRAVERSE SERVO ON

INITIAL/LOGO		ABBREVIATIONS
V	VBLANK	V BLANKING
	VCC	COLLECTOR POWER SUPPLY VOLTAGE
	VCDCONT	VIDEO CD CONTROL (TRACKING BALANCE)
	VDD	DRAIN POWER SUPPLY VOLTAGE
	VFB	VIDEO FEED BACK
	VREF	VOLTAGE REFERENCE
	VSS	SOURCE POWER SUPPLY VOLTAGE
W	WAIT	BUS CYCLE WAIT
	WDCK	WORD CLOCK
	WEH	WRITE ENABLE HIGH
	WSR	WORD SELECT RECEIVER

INITIAL/LOGO		ABBREVIATIONS
X	X	X' TAL
	XALE	X ADDRESS LATCH ENABLE
	XAREQ	X AUDIO DATA REQUEST
	XCDROM	X CD ROM CHIP SELECT
	XCS	X CHIP SELECT
	XCSYNC	X COMPOSITE SYNC
	XDS	X DATA STROBE
	XHSYNCO	X HORIZONTAL SYNC OUTPUT
	XHINT	XH INTERRUPTREQUEST
	XI	X' TAL OSCILLATOR INPUT
	XINT	X INTERRUPT
	XMW	X MEMORY WRITE ENABLE
	XO	X' TAL OSCILLATOR OUTPUT
	XRE	X READ ENABLE
	XSRMCE	X SRAM CHIP ENABLE
	XSRMOE	X SRAM OUTPUT ENABLE
	XSRMWE	X SRAM WRITE ENABLE
	XVCS	X V-DEC CHIPSELECT
	XVDS	X V-DEC CONTROL BUS
	XVSYNCO	STROBE
		X VERTICAL SYNC OUTPUT

13. VOLTAGE CHART

Note:

- Indicated voltage values are the atandard values for the unit measured by the DC electronic circuit tester (high-impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on theinternal impedance of the DC circuit tester.

13.1. MAIN P.C.B.

13.2. LCD DRIVE P.C.B.

14. BLOCK DIAGRAM

14.1. OVERALL BLOCK DIAGRAM

14.2. POWER SUPPLY BLOCK DIAGRAM

14.3. SERVO BLOCK DIAGRAM

14.4. AUDIO/ VIDEO BLOCK DIAGRAM

14.5. LCD BLOCK DIAGRAM

15. INTERCONNECTION SCHEMATIC DIAGRAM & SCHEMATIC DIAGRAM NOTES

15.1. INTERCONNECTION SCHEMATIC DIAGRAM

15.2. SCHEMATIC DIAGRAM NOTES

This schematic diagram may be modified at any time with the development of new technology.


Important safety notice:

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Important safety notice:

There are special components used in this equipment which are important for safety.

These parts are marked by  in the schematic diagrams. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

Caution!

IC and LSI are sensitive to static electricity.

Secondary trouble can be prevented by taking care during repair.

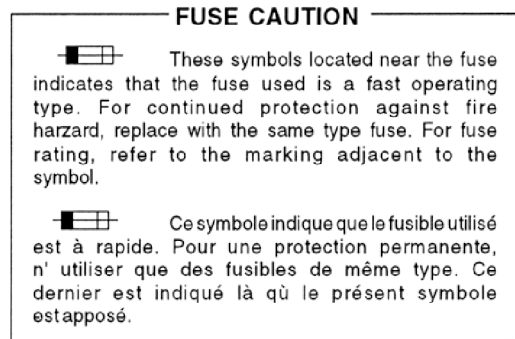
Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.





16. SCHEMATIC DIAGRAM

16.1. CHARGE BATTERY SECTION (MAIN P.C.B. (1/9)) SCHEMATIC DIAGRAM

16.2. POWER SUPPLY SECTION (MAIN P.C.B. (2/9)) SCHEMATIC DIAGRAM

16.3. SERVO SECTION (MAIN P.C.B. (3/9)) SCHEMATIC DIAGRAM

16.4. OPTICAL PICK UP SECTION (MAIN P.C.B. (4/9)) SCHEMATIC DIAGRAM

16.5. DV2 SECTION (MAIN P.C.B. (5/9)) SCHEMATIC DIAGRAM

16.6. VIDEO OUT SECTION (MAIN P.C.B. (6/9)) SCHEMATIC DIAGRAM

16.7. AUDIO OUT SECTION (MAIN P.C.B. (7/9)) SCHEMATIC DIAGRAM

16.8. OPERATION SECTION (MAIN P.C.B. (8/9)) SCHEMATIC DIAGRAM

16.9. LCD OUT SECTION (MAIN P.C.B. (9/9)) SCHEMATIC DIAGRAM

16.10. SW SCHEMATIC DIAGRAM

16.11. LCD DRIVE SCHEMATIC DIAGRAM

17. CIRCUIT BOARD ASSEMBLY

17.1. MAIN P.C.B. (1/2) (COMPONENT SIDE)

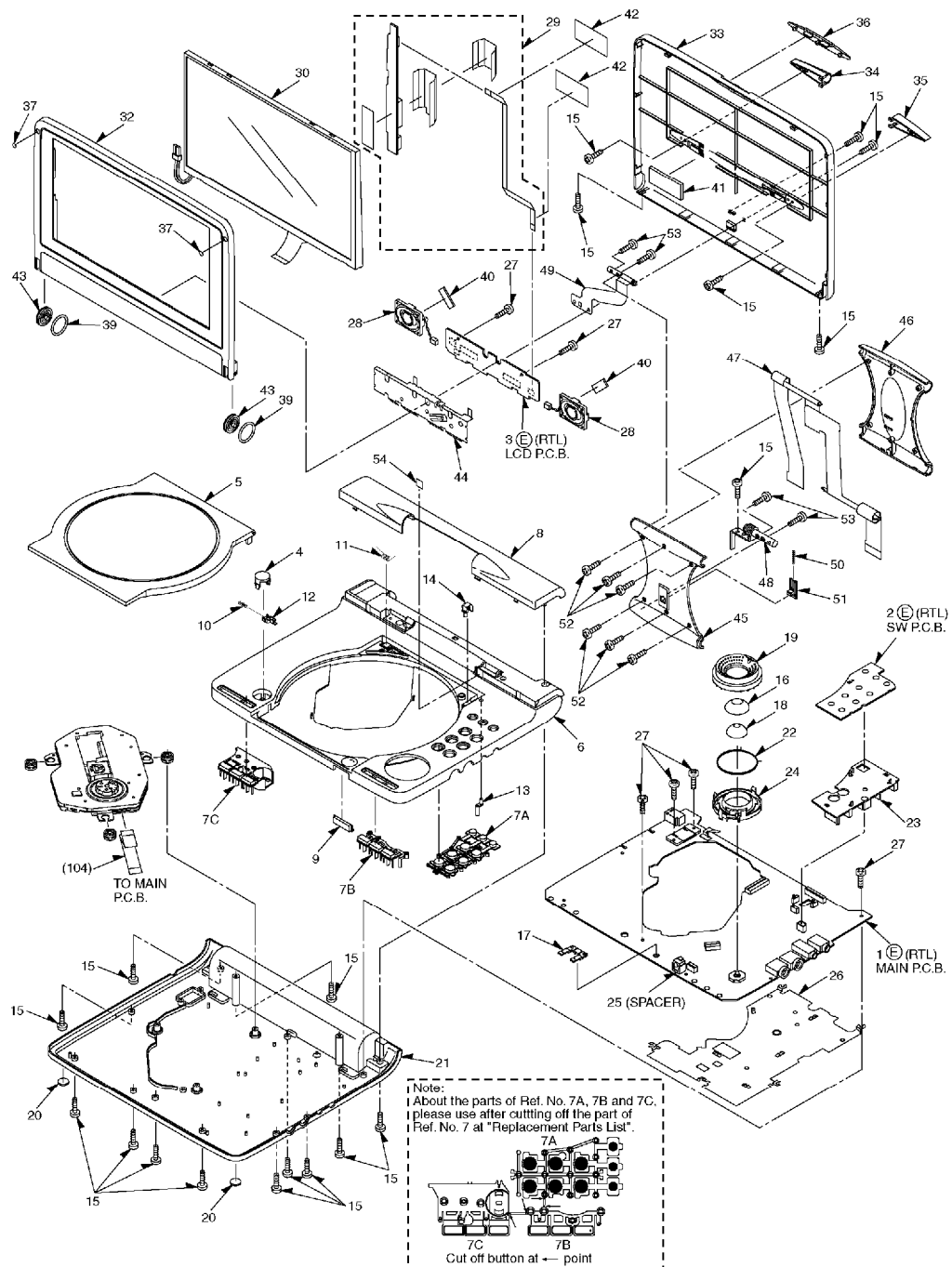
17.2. MAIN P.C.B. (2/2) (FOIL SIDE)

17.3. SW & LCD DRIVE P.C.B. (1/2) (COMPONENT SIDE)

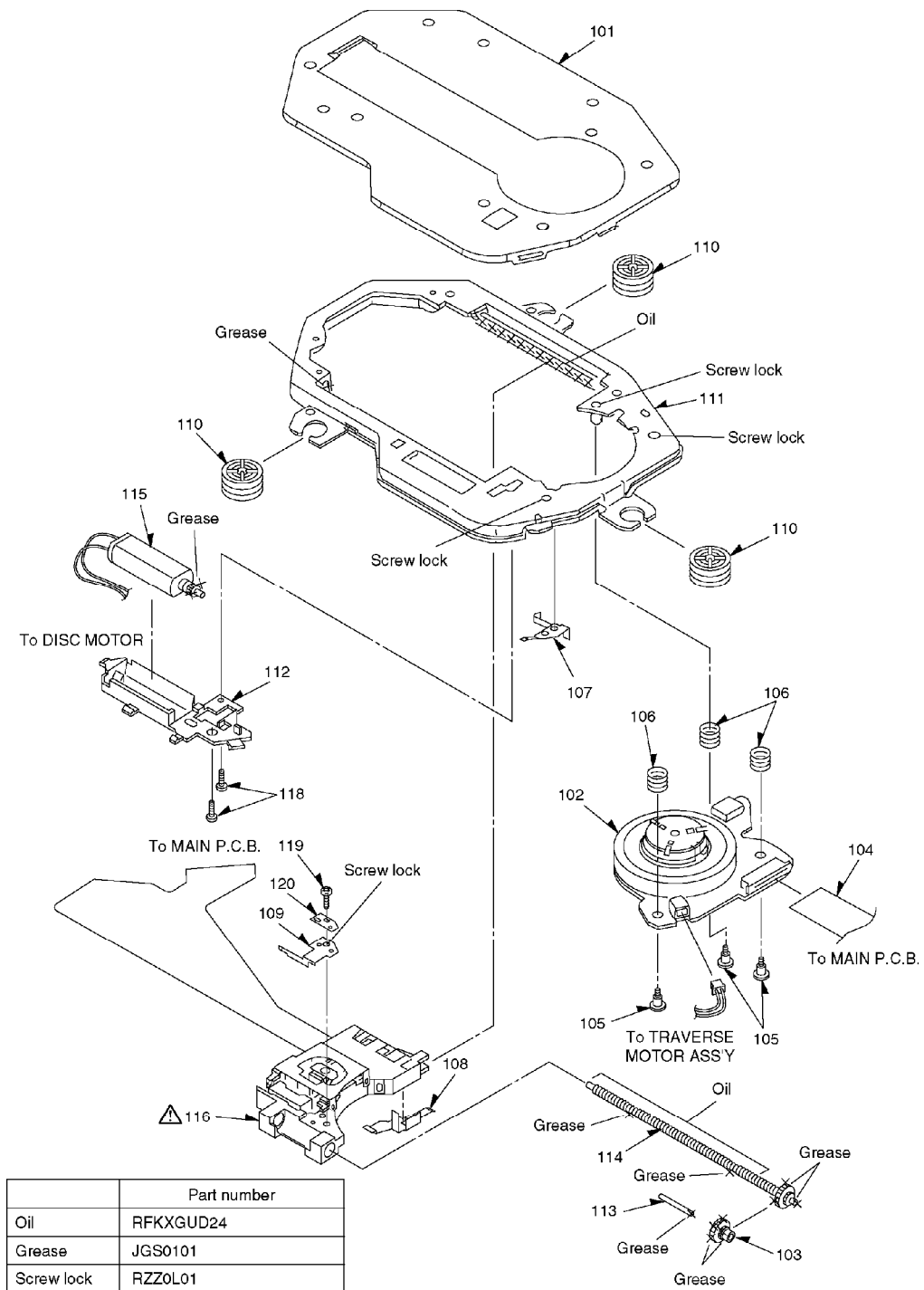
17.4. SW & LCD DRIVE P.C.B. (2/2) (FOIL SIDE)

18. EXPLODED VIEWS

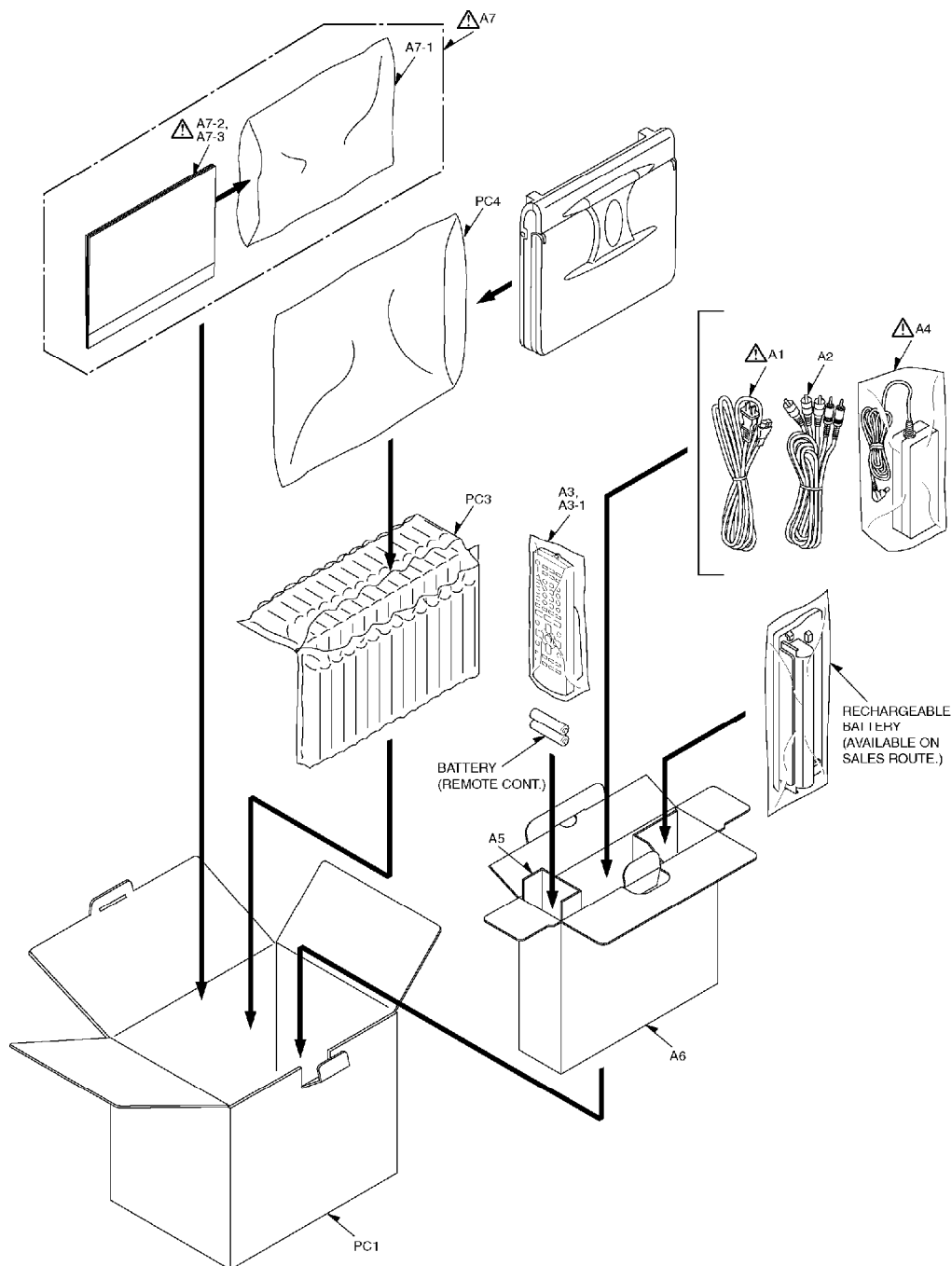
18.1. Casing Parts & Mechanism Section Exploded View



18.2. Mechanism Section Exploded View



18.3. Packing & Accessories Exploded View



19. REPLACEMENT PARTS LIST

Notes:

*Important safety notice:

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purposes of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

*Warning: This product uses a laser diode. Refer to caution statements.

*Capacity values are in microfarads (μ F) unless specified otherwise, P=Pico-farads (pF), F= Farads (F).







*Resistance values are in ohms, unless specified otherwise, 1K=1,000 (OHM), 1M=1,000k (OHM).

*The marking (RTL) indicates the retention time is limited for this item. After the discontinuation of this assembly in production, it will no longer be available.

*"<IA>" mark in Remarks indicate languages of instruction manual. [<IA>: English, <IB>: Canadian French]

*All parts are supplied by S.P.C..

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
1	RFKBL50MP	MAIN P.C.B.	1	
2	RFKBL50CP	SW P.C.B.	1	(RTL)
3	RFKBL50LP	LCD P.C.B.	1	(RTL)
4	RGU2316-S	OPEN BUTTON	1	
5	RKF0698-S	DISC COVER	1	
6	RKM0513-S	MAIN CABINET	1	
7	RGU2315-S	OPERATION BUTTON	1	
8	RKQ0267-S	HINGE COVER	1	
9	RKW0762-W	REMO.SENSOR WINDOW	1	
10	RMB0732	OPEN BUTTON SPRING	1	
11	RMB0796	OPEN SPRING	1	
12	RML0665	LOCK LEVER	1	
13	RMR1496-1W	LCD OFF BUTTON	1	
14	RMR1627-H	STOPPER	1	
15	XQN17+BG6FN	SCREW	19	
16	RGK1423-Q1	NAVIGATOR BUTTON CAP	1	
17	RGL0662-W	LIGHTING PIECE	1	
18	RGV0287-S	NAVIGATOR BUTTON	1	
19	RGW0407-K	SHUTTLE RING	1	
20	RKA0112-K	LEG	2	
21	RKS0396-S	BOTTOM CABINET	1	
22	RMB0685-2	SHUTTLE SPRING	1	
23	RMQ1332	JACK COVER	1	
24	RMR1626-X	SHUTTLE BASE	1	
25	RMX0240	REMOTE SENSOR SPACER	1	
26	RMY0341	SHEET	1	
27	XQN17+BG4FN	SCREW	6	
28	EAS2D01R0	SPEAKER	2	
29	ECXF6807A	INVERTER ASS'Y	1	
30	L5EDD1H00006	LCD PANEL	1	
32	RYP1262-S	MONITOR CABINET ASS'Y	1	
33	RYF0730-S	MONITOR COVER ASS'Y	1	
34	RGQ0399-S	SHAFT HOLDER(L)	1	
35	RGQ0400-S	SHAFT HOLDER(R)	1	
36	RGQ0401-H	MONITOR CUSHION	1	
37	RGQ0406-H	CUSHION	2	
39	RMG0593-1H	ROLLER RUBBER	2	
40	RMG0658-K	SPEAKER CUSHION	2	
41	RMQ1343	GASKET	1	
42	RMQ1353	SHEET	2	
43	RMR1628-H	ROLLER	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
44	RSC0738	SHIELD PLATE	1	
45	RGQ0396-S	MONO ARM	1	
46	RGQ0397-S	MONO ARM COVER	1	
47	RJB2945A	MONO ARM FPC	1	
48	RKC0021	FRICTION HINGE(A)	1	
49	RKC0022	FRICTION HINGE(B)	1	
50	RME0371	LOCK LEVER SPRING	1	
51	RML0639	LOCK LEVER	1	
52	XQN14+BG3FC	SCREW	6	
53	XQN17+B4FN	SCREW	4	
54	RMV0291	SPACER	1	
101	RMK0503	COVER	1	
102	BKL2E03KA	DISC MOTOR	1	
103	RDG0514	INTERFACE GEAR	1	
104	REZ1403A	SPINDLE FFC	1	
105	RHD17037	SCREW	3	
106	RMB0681	TILT SPRING	3	
107	RMC0448	SPRING	1	
108	RMC0592	SPRING	1	
109	RMC0455	SPRING	1	
110	RMG0562-K	DAMPER	3	
111	RMK0502-5	TRAVERSE BASE	1	
112	RMR1393-W	MOTOR COVER	1	
113	RMS0751	INTERFACE GEAR SHAFT	1	
114	RXJ0031	DRIVE SHAFT ASS'Y	1	
115	RXQ0786	TRAVERSE MOTOR ASS'Y	1	
116	RAF3134A	OPTICAL PICK-UP	1	
118	XQN17+BG4FN	SCREW	2	
119	RHD17043	SCREW	1	
120	RMC0593	SUPPORT PLATE	1	
A1	K2CB2CB00006	AC CORD	1	
A2	K2KA6CB00003	AV CORD	1	
A3	N2QAJB000105	REMOTE CONTROL ASS'Y	1	
A3-1	ETR005152001	BATTERY COVER	1	
A4	RFEA906W-W	AC ADAPTOR	1	
A5	RPQ1797	PAD	1	
A6	RPQF0259	ACCESSORY CASE	1	
A7	RQF5406	FAN BAG ASS'Y	1	
A7-1	RPF0046-1	POLYETHYLENE BAG(FAN BAG)	1	
A7-2	RQCB0833	CCP SHEET	1	
A7-3	RQT7682-1P	OPERATING INSTRUCTIONS	1	<1A> 
A7-3	RQT7683-1C	OPERATING INSTRUCTIONS	1	<1B> 
C1001,02	ECJ2YB1C105K	16V 1U	2	F1J1C105A118
C1005	ECJ1VB1A105K	10V 1U	1	
C1007,08	ECJ1XC1H101J	50V 100P	2	F1H1H101A004
C1011	ECJ1VB1H102K	50V 1000P	1	
C1012	ECJ1VB1A105K	10V 1U	1	
C1015	ECUV1A474KBV	10V 0.47U	1	F1H1A474A025
C1016	ECJ1VB1A105K	10V 1U	1	
C1017	RCST1CY106RG	16V 10U	1	F3F1C1060002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C1018	ECJ1VC1H151J	50V 150P	1	
C1019	RCST1CY106RG	16V 10U	1	F3F1C1060002
C1021	ECJ1VC1H151J	50V 150P	1	
C1022	ECJ1XB1H271K	50V 270P	1	F1H1H271A009
C1023	ECJ1VB1A224K	10V 0.22U	1	
C1024	ECJ1VB1H102K	50V 1000P	1	
C1025	ECJ1VB1H682K	50V 6800P	1	
C1026	ECJ1VB1H182K	50V 1800P	1	
C1027	ECUX1H332KBV	50V 3300P	1	
C1028	ECJ1VB1H182K	50V 1800P	1	
C1029,30	ECJ1VB1H102K	50V 1000P	2	
C1031	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C1038	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C1043,44	ECJ2YB1C105K	16V 1U	2	F1J1C105A118
C1051-54	RCST1AX476RG	10V 47U	4	F3G1A4760002
C1055	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C1063	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1066	ECJ1VB1H103K	50V 0.01U	1	
C1067,68	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C1069	ECJ1VB1A105K	10V 1U	1	
C1070	ECJ1VB1H102K	50V 1000P	1	
C1071	ECJ1XC1H101J	50V 100P	1	F1H1H101A004
C1072	ECJ1VB1H182K	50V 1800P	1	
C1073	ECJ1VB1A224K	10V 0.22U	1	
C1074	ECJ1VB1A105K	10V 1U	1	
C1097-99	ECJ1VF1C104Z	16V 0.1U	3	F1H1C1040008
C1101	RCST1CX226RG	16V 22U	1	F3G1C2260001
C1102	ECJ3YB1E105K	25V 1U	1	
C1103	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C1104	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C1105,06	F2H1E680A003	25V 68U	2	
C1109	ECST0JY106R	6.3V 10U	1	
C1401	ECJ1VB1H103K	50V 0.01U	1	
C1404	ECJ1VB1H102K	50V 1000P	1	
C1406	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C1421,22	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C1481	ECJ1VF1A105Z	10V 1U	1	F1H1A105A030
C1482,83	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C1484	ECJ1VB1A105K	10V 1U	1	
C1486	RCST1CY106RG	16V 10U	1	F3F1C1060002
C1601	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C1605	ECUV1C106KBP	16V 10U	1	F1L1C106A011
C1622	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C1623	ECST0JY106R	6.3V 10U	1	
C1624	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C1625	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C1651	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C1652	VCEV1CHY101V	16V 100P	1	F2H1C101A003
C1801	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C1804	ECJ1VB1H102K	50V 1000P	1	
C1806,07	ECJ1VB1H102K	50V 1000P	2	
C1809	ECJ1VC1H101J	50V 100P	1	
C2001	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C2002	ECJ1VB1C333K	16V 0.033U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C2003-05	ECJ1VF1C104Z	16V 0.1U	3	F1H1C1040008
C2006	ECJ1VB1H562K	50V 5600P	1	
C2007	ECJ1VB1C183K	16V 0.018U	1	
C2008	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C2009-12	ECJ1VB1A105K	10V 1U	4	
C2013-17	ECJ1XB1C104K	16V 0.1U	5	
C2018-23	ECJ1VF1C104Z	16V 0.1U	6	F1H1C1040008
C2024,25	ECJ1VB1A105K	10V 1U	2	
C2026,27	F3F0J4760003	6.3V 47U	2	
C2028	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C2501	F3F1A226A008	10V 22U	1	
C2502	ECJ1XB1C104K	16V 0.1U	1	
C2503-08	ECUX1H332KBV	50V 3300P	6	
C2509	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C2510	ECJ1VB1A105K	10V 1U	1	
C2511,12	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C2513	ECJ1VB1H103K	50V 0.01U	1	
C2514	ECJ1XB1C104K	16V 0.1U	1	
C2515	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C2516,17	ECJ1VB1A105K	10V 1U	2	
C3001	ECJ1VB1H222K	50V 2200P	1	
C3002-05	ECJ1VF1C104Z	16V 0.1U	4	F1H1C1040008
C3006	ECJ1VB1A105K	10V 1U	1	
C3007	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3008	ECJ1VB1A105K	10V 1U	1	
C3009	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3010	ECJ1VB1A105K	10V 1U	1	
C3011-13	ECJ1VF1C104Z	16V 0.1U	3	F1H1C1040008
C3014	ECJ1VB1H222K	50V 2200P	1	
C3016	ECJ1VB1A105K	10V 1U	1	
C3017-19	ECJ1VF1C104Z	16V 0.1U	3	F1H1C1040008
C3020	ECJ1VB1A105K	10V 1U	1	
C3021,22	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C3023,24	ECJ1VB1A105K	10V 1U	2	
C3025	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3026,27	F3F0J4760003	6.3V 47U	2	
C3028	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3030	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3031	ECJ1XC1H101J	50V 100P	1	F1H1H101A004
C3032	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3035-38	ECJ1VB1H222K	50V 2200P	4	
C3051	ECJ1VB1A105K	10V 1U	1	
C3052	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3053	ECJ1VC1H221J	50V 220P	1	
C3054,55	ECJ1VB1A105K	10V 1U	2	
C3056	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C3057	ECJ1VB1H222K	50V 2200P	1	
C3101,02	ECJ1VB1A105K	10V 1U	2	
C3103-05	ECJ1VF1C104Z	16V 0.1U	3	F1H1C1040008
C3106	F3F0J4760003	6.3V 47U	1	
C3107	ECJ1VB1A105K	10V 1U	1	
C3108	F3F0J4760003	6.3V 47U	1	
C3201	ECJ1VB1A105K	10V 1U	1	
C3202	ECJ1VB1H103K	50V 0.01U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C3203	ECJ1VF1C104Z	16V 0.1U	1	
C3204,05	F2G0G471A002	4V 470U	2	
C3206	ECJ1VB1H103K	50V 0.01U	1	
C3209	ECJ1VB1H103K	50V 0.01U	1	
C3210,11	RCST0JY226RG	6.3V 22U	2	F3F0J2260002
C3213,14	ECJ1XC1H220J	50V 22P	2	
C3215	F3F0J4760003	6.3V 47U	1	
C3220,21	ECJ1VC1H180J	50V 18P	2	
C3231	ECJ1XB1C104K	16V 0.1U	1	
C3299,00	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C4001,02	F3F1A1060002	10V 10U	2	
C4003,04	ECJ1VC1H390J	50V 39P	2	
C4005,06	F3F1A1060002	10V 10U	2	
C4007,08	ECJ1VB1H102K	50V 1000P	2	
C4011,12	RCST1AX476RG	10V 47U	2	F3G1A4760002
C4013,14	ECJ1VB1H103K	50V 0.01U	2	
C4015	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C4016	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C4017	VCEV1CHY101V	16V 100P	1	F2H1C101A003
C4018	F3F1A226A008	10V 22U	1	
C4019	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C4020	F3F0J4760003	6.3V 47U	1	
C4021	F3F1A226A008	10V 22U	1	
C4022	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C4023	F3F0J4760003	6.3V 47U	1	
C4024	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C4025	F3F1A1060002	10V 10U	1	
C4026,27	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C4028	ECJ1VB1H103K	50V 0.01U	1	
C4030	F3F1A226A008	10V 22U	1	
C4031,32	ECJ1VB1A105K	10V 1U	2	
C4033	F3F0J4760003	6.3V 47U	1	
C4035	ECJ1VB1H102K	50V 1000P	1	
C4036	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C4037	F3F0J4760003	6.3V 47U	1	
C4038	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C4039,40	RCST1AX476RG	10V 47U	2	F3G1A4760002
C4041,42	ECJ1VB1H103K	50V 0.01U	2	
C4050	F3F0J4760003	6.3V 47U	1	
C4051,52	ECJ1VB1A105K	10V 1U	2	
C4053	F3F0J4760003	6.3V 47U	1	
C4057,58	ECJ1VB1A105K	10V 1U	2	
C4059,60	ECJ1VB1H102K	50V 1000P	2	
C4061,62	F3F1A1060002	10V 10U	2	
C4063-66	RCST1AX476RG	10V 47U	4	F3G1A4760002
C4102	ERJ3GEY0R00V	1/10W 0	1	
C4506	ERJ3GEY0R00V	1/10W 0	1	
C5201	ECJ1VB1H102K	50V 1000P	1	
C5202,03	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C5204,05	F3F1A1060002	10V 10U	2	
C5206	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C5209,10	ECST0JY106R	6.3V 10U	2	
C5211	F3F0J4760003	6.3V 47U	1	
C5214	ECJ1VB1A105K	10V 1U	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C5215	F3F0J4760003	6.3V 47U	1	
C5216	ECJ1VB1A105K	10V 1U	1	
C5221	ECJ1VC1H101J	50V 100P	1	
C5222	ECST0JY106R	6.3V 10U	1	
C5232	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C5255	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C5299	ECJ1XC1H101J	50V 100P	1	F1H1H101A004
C6001	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C6002	ECJ1VB1A105K	10V 1U	1	
C6003	F3F0J4760003	6.3V 47U	1	
C6004,05	ECJ1VB1A105K	10V 1U	2	
C6006	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C6007	ECJ1XB1C104K	16V 0.1U	1	
C6008	ECJ1VB1A105K	10V 1U	1	
C6014	ECJ1XC1H101J	50V 100P	1	F1H1H101A004
C6201	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C6202	ECJ1XC1H101J	50V 100P	1	F1H1H101A004
C6301,02	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C6351	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C6501	F3F0J4760003	6.3V 47U	1	
C6502,03	ECJ1VF1C104Z	16V 0.1U	2	F1H1C1040008
C6504	ECST0JY106R	6.3V 10U	1	
C6505	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C6506	ECJ1VC1H070C	50V 70P	1	
C6507	ECJ1VC1H080C	50V 80P	1	
C6508	ECJ1VF1C104Z	16V 0.1U	1	F1H1C1040008
C8001,02	ECJ1VC1H180J	50V 18P	2	
C8003-05	ECJ1XB1C104K	16V 0.1U	3	
C8006	ECJ1VB1A105K	10V 1U	1	
C8007	ECJ1XB1C223K	16V 0.022U	1	ECJ1VB1C223K
C8008	ECJ1XC1H060D	50V 60P	1	ECJ1VC1H060D
C8010,11	ECJ1XB1C104K	16V 0.1U	2	
C8012	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C8013-15	ECJ1XB1C104K	16V 0.1U	3	
C8016-19	ECJ1VB1A105K	10V 1U	4	
C8020-22	ECUM1A225KBN	10V 2.2U	3	
C8023	ECJ1VB1H103K	50V 0.01U	1	
C8024	ECJ1XB1C223K	16V 0.022U	1	ECJ1VB1C223K
C8025	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C8026	ECJ1XB1C223K	16V 0.022U	1	ECJ1VB1C223K
C8027	ECUV1A474KBV	10V 0.47U	1	F1H1A474A025
C8029	F3F1A1060002	10V 10U	1	
C8030	ECUV1A335KBN	10V 3.3U	1	F1J1A3350002
C8031	ECJ1VB1H561K	50V 560P	1	
C8032	ECUM1A225KBN	10V 2.2U	1	
C8040	ECJ1VF1C104Z	16V 0.1U	1	
C8041	ECJ1XC1H820J	50V 82P	1	ECJ1VC1H820J
C8042	ECJ1VC1H680J	50V 68P	1	
C8045	ECJ1VB1A105K	10V 1U	1	
C8201	ECJ1VB1A105K	10V 1U	1	
C8202-11	ECJ1VC1H470J	50V 47P	10	
C8213	ECJ1VB1H103K	50V 0.01U	1	
C8215	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C8217	ECJ2YB1C105K	16V 1U	1	F1J1C105A118

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
C8218	ECST0JY106R	6.3V 10U	1	
C8220	F3F1A1060002	10V 10U	1	
C8222	ECJ1VC1H151J	50V 150P	1	
C8224,25	ECJ1VF1C104Z	16V 0.1U	2	
C8230	ECJ1VB1H821K	50V 820P	1	
C8231,32	ECJ1VC1H221J	50V 220P	2	
C8401	ECJ1VF1C104Z	16V 0.1U	1	
C8402	ECJ1VB1A105K	10V 1U	1	
C8403	ECJ1VB1H103K	50V 0.01U	1	
C8404	RCST1CY106RG	16V 10U	1	F3F1C1060002
C8407	ECUVNJ475MBN	6.3V 4.7U	1	F1J0J4750002
C8409,10	ECJ1VF1C104Z	16V 0.1U	2	
C8601	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C8602	ECJ1VB1H102K	50V 1000P	1	
C8604	ECJ1XB1C104K	16V 0.1U	1	
C8605	ECJ1VB1H561K	50V 560P	1	
C8606	ECJ1VF1H104Z	25V 0.1U	1	
C8607	ECJ1VB1A105K	10V 1U	1	
C8802	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C8803	F3F1A226A008	10V 22U	1	
C8805	ECJ1VB1A105K	10V 1U	1	
C8806	F3F0J4760003	6.3V 47U	1	
C8807	ECJ1VB1H103K	50V 0.01U	1	
C8808	RCST0JY226RG	6.3V 22U	1	F3F0J2260002
C8809	ECJ2YB1C105K	16V 1U	1	F1J1C105A118
C8841	ECJ1VF1C104Z	16V 0.1U	1	
D1011	JVCRB051L40T	DIODE	1	B0JCPE000004
D1013,14	M1FM3	DIODE	2	B0JCMD000008
D1015,16	MAZ80560ML	DIODE	2	
D1017,18	MA8039MTX	DIODE	2	
D1021	M1FM3	DIODE	1	B0JCMD000008
D1101	M1FM3	DIODE	1	B0JCMD000008
D1102,03	MA2J11100L	DIODE	2	
D1401	SFPA-73V	DIODE	1	B0JCPD000003
D1403	JVCRB051L40T	DIODE	1	B0JCPE000004
D1481	MA2J11100L	DIODE	1	
D1482	MAZ81000LL	DIODE	1	
D1483	MA142WK	DIODE	1	MA3J142E0L
D1484	MA2J11100L	DIODE	1	
D1485	MA142WK	DIODE	1	MA3J142E0L
D1486	MA8047M	DIODE	1	MAZ80470M
D1488	MAZ80560ML	DIODE	1	
D1602	JVCRB051L40T	DIODE	1	B0JCPE000004
D1621	JVCRB051L40T	DIODE	1	B0JCPE000004
D4001	MA3J142D0L	DIODE	1	
D4002	MA2J11100L	DIODE	1	
D4003	MA3J142D0L	DIODE	1	
D4004	MA142WK	DIODE	1	MA3J142E0L
D4008,09	MA2J11100L	DIODE	2	
D5221	MA2J11100L	DIODE	1	
D6003	MA2SD2400L	DIODE	1	
D6005	MA2SD2400L	DIODE	1	
D6008	B3ACB0000096	DIODE	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
D6009	B3AAB0000151	DIODE	1	
D6010	MA2J11100L	DIODE	1	
D8001	MA2Z07700L	DIODE	1	
D8201	MA745WA-TX	DIODE	1	MA3Z745D0L
D8202	MA2Z07700L	DIODE	1	
D8402	MA132WA	DIODE	1	MA3S132D
D8601	MA2X33800L	DIODE	1	
FP1801	K1MN30A00061	CONNECTOR(30P)	1	
FP2501	K1MN16B00100	CONNECTOR(16P)	1	
FP3031	K1MN10A00068	CONNECTOR(10P)	1	
FP5201	K1MN30B00049	CONNECTOR(30P)	1	
FP6001	K1KB10A00121	CONNECTOR(10P)	1	
FP6801	K1KB10A00120	CONNECTOR(10P)	1	
FP8001	K1MN30B00049	CONNECTOR(30P)	1	
FP8002	VJS3791D006	CONNECTOR(6P)	1	K1MN06B00013
FP8003,04	K1KA02B00053	CONNECTOR(2P)	2	
FP8005	VJS3801D030	CONNECTOR(30P)	1	K1MN30B00050
IC1001	C1ZBZ0002345	IC	1	
IC1003	C0DBZHD00008	IC	1	
IC1004	C0CBCDC00008	IC	1	
IC1101	C0CBCDC00008	IC	1	
IC1401	XP132A1545SR	IC	1	B1DHFD000008
IC1481	C0EBM0000007	IC	1	
IC1482	C0EBK0000061	IC	1	
IC1483	C0CBCDC00008	IC	1	
IC1601	C0DBDZZ00006	IC	1	
IC1602	C0EBB0000036	IC	1	
IC2501	AN8496SA-E1V	IC	1	
IC2502	C0GBL0000002	IC	1	
IC3001	MN2DS0003APH	IC	1	
IC3051	C3ABPG000133	IC	1	
IC3201	TK15430VTL	IC	1	C1AB00001308
IC4001	C0FBBK000035	IC	1	
IC4002	NJM3404AV	IC	1	C0ABBA000076
IC4003	C0ABBA000149	IC	1	
IC4004	NJM3404AV	IC	1	C0ABBA000076
IC4007	C0ZBZ0000892	IC	1	
IC4009	C0CBCDC00008	IC	1	
IC4010	C0JBAA000338	IC	1	
IC4043	C1BB00000637	IC	1	
IC4053,54	C1BB00000745	IC	2	
IC6001	MN101C39CBY	IC	1	
IC6002	C0EBH0000147	IC	1	
IC6003	B3RAD0000075	IC	1	
IC6006	C0JBAA000175	IC	1	
IC6201	C0EBE0000070	IC	1	
IC6301	RFKFPS81L160	IC	1	
IC6351	RFKBLS50MP	MAIN P.C.B.	1	
IC6501	C1DB00000980	IC	1	
IC8001	AN2546FH-A	IC	1	
IC8201	MN5814	IC	1	
IC8202	TC7W14FU	IC	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
IC8401	C3EBDC000046	IC	1	
IC8403	C0ABBA000042	IC	1	
IC8602	C0ABBA000075	IC	1	
IC8801	AN78L05M-E1	IC	1	AN78L05ME1
IC8802	C0CBABC00122	IC	1	
ICP1401	K5H3121A0004	IC PROTECTOR	1	
ICP1421	K5H3121A0004	IC PROTECTOR	1	
J1401	JJSEC3110010	JACK,DC IN	1	K2EC2B000004
J1421	K4ZZ04000033	JACK,BATTERY TERMINAL	1	
J3201	K2HC104B0016	JACK,VIDEO	1	
J4001	K2HC108B0002	JACK,AUDIO/OPT OUT	1	
J4002,03	VJJ0686	JACK,HEADPHONE	2	K2HC105B00009
K1899	RMC0591	EARTH SPRING	1	
K3098,99	K4ZZ01000183	TERMINAL BOARD	2	
K3299	K4ZZ01000183	TERMINAL BOARD	1	
K5299	K4ZZ01000183	TERMINAL BOARD	1	
K8002	ECJ1VF1C104Z	16V 0.1U	1	
K8003	ECJ1VC1H101J	50V 100P	1	
K8005	ECJ1VC1H101J	50V 100P	1	
K8006	ERJ3GEY0R00V	1/10W 0	1	
K8202-04	ERJ3GEY0R00V	1/10W 0	3	
K8206-08	ERJ3GEY0R00V	1/10W 0	3	
K8211-13	ERJ3GEY0R00V	1/10W 0	3	
K8403	ERJ3GEY0R00V	1/10W 0	1	
L1002	VLQ0914M150T	COIL 15UH	1	G1C150M00009
L1006-09	VLQ0914M150T	COIL 15UH	4	G1C150M00009
L1101-03	G1C220KA0038	COIL 22UH	3	
L1401	VLQ0849	COIL	1	G0B200H00005
L1801	VLQ0914M150T	COIL 15UH	1	G1C150M00009
L2001,02	G1C100K00020	COIL 10UH	2	
L2501	G1C220KA0038	COIL 22UH	1	
L2502,03	G1C100K00020	COIL 10UH	2	
L2504	G1C220KA0038	COIL 22UH	1	
L2505,06	G1C100K00020	COIL 10UH	2	
L3003	G1C100K00020	COIL 10UH	1	
L3101	G1C100K00020	COIL 10UH	1	
L3204	G1C220KA0038	COIL 22UH	1	
L4001	J0JBC0000028	COIL	1	
L4002	G1C220KA0038	COIL 22UH	1	
L4004	VLP0323A601R	COIL	1	J0JCC0000062
L4006	J0JBC0000028	COIL	1	
L5201	G1C100K00020	COIL 10UH	1	
L6501,02	G1C220KA0038	COIL 22UH	2	
L8001	VLQ0426J560	COIL 56UH	1	G1C560J00001
L8030	VLQ0426J120	COIL 12UH	1	G1C120J00005
L8201	G1C100K00020	COIL 10UH	1	
L8205	G1C100K00020	COIL 10UH	1	
L8602	VLQ0426J1R5	COIL 1.5UH	1	G1C1R5J00007
L8603	G1C100K00020	COIL 10UH	1	
L8801-04	G1C100K00020	COIL 10UH	4	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
L8805	ERJ3GEY0R00V	1/10W 0	1	
LB1801	J0JHC0000045	COIL	1	
LB1802,03	VLP0323A601R	COIL	2	J0JCC0000062
LB1804	J0JCC0000119	COIL	1	
LB1805,06	VLP0323A601R	COIL	2	J0JCC0000062
LB1807	J0JHC0000045	COIL	1	
LB1841	VLP0323A601R	COIL	1	J0JCC0000062
LB3001,02	J0JHC0000045	COIL	2	
LB3003-05	VLP0323A601R	COIL	3	J0JCC0000062
LB3201,02	VLF1315A102	COIL	2	J0JHC0000015
LB3203	VLP0323A601R	COIL	1	J0JCC0000062
LB4001-04	VLQ0865M220T	COIL	4	G1C220M00012
LB4005,06	J0JBC0000028	COIL	2	
LB4008,09	VLQ0865M220T	COIL	2	G1C220M00012
LB4011-14	VLQ0865M220T	COIL	4	G1C220M00012
LB4051	VLQ0865M220T	COIL	1	G1C220M00012
LB5206	J0JBC0000028	COIL	1	
LB5207-13	VLP0323A601R	COIL	7	J0JCC0000062
LB5216	VLP0323A601R	COIL	1	J0JCC0000062
LB5218	MA2SD2400L	DIODE	1	
LB5219	VLP0323A601R	COIL	1	J0JCC0000062
LB5221-24	VLP0323A601R	COIL	4	J0JCC0000062
LB5226-29	VLP0323A601R	COIL	4	J0JCC0000062
LB5230	J0JHC0000045	COIL	1	
LB5231,32	VLP0323A601R	COIL	2	J0JCC0000062
LB6501	J0JCC0000119	COIL	1	
LB6503	J0JCC0000119	COIL	1	
LB6504,05	VLP0323A601R	COIL	2	J0JCC0000062
LB6506	J0JCC0000119	COIL	1	
LB6510	VLP0323A601R	COIL	1	J0JCC0000062
LB8202-04	J0JCC0000077	COIL	3	
PC1	RPK2152	GIFT BOX	1	
PC3	RPQ1795	QOO PACK	1	
PC4	RPF0338-1	POLYETHYLENE BAG(UNIT)	1	
Q1001-04	2SA2012	TRANSISTOR	4	
Q1008-11	B1CFHA000001	TRANSISTOR	4	
Q1101	2SD1624-S	TRANSISTOR	1	B1BDCF000007
Q1401	UN5213TX	TRANSISTOR	1	UNR521300L
Q1481	2SB970-R	TRANSISTOR	1	2SB09700R
Q1621	B1BBCF000011	TRANSISTOR	1	
Q1622	B1CFHA000001	TRANSISTOR	1	
Q2501	2SK3065T100	TRANSISTOR	1	B1CFNG000001
Q3202	2SB1218A	TRANSISTOR	1	
Q5201,02	2SD1819AWL	TRANSISTOR	2	
Q5203,04	B1CFHA000001	TRANSISTOR	2	
Q5211	B1ADPC000004	TRANSISTOR	1	
Q5215	B1ADPC000004	TRANSISTOR	1	
Q8001-03	2SD2216J-S	TRANSISTOR	3	
Q8201,02	2SD2216J-S	TRANSISTOR	2	
Q8401	2SB1462J-S	TRANSISTOR	1	
Q8402	2SD2216J-S	TRANSISTOR	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
Q8406	XP0460100L	TRANSISTOR	1	
QR1008,09	UN5214TX	TRANSISTOR	2	UNR521400L
QR1481-83	B1GDCFJN0011	TRANSISTOR	3	
QR1604,05	UN5214TX	TRANSISTOR	2	UNR521400L
QR3201	UN5213TX	TRANSISTOR	1	UNR521300L
QR4003	B1GDCFJN0011	TRANSISTOR	1	
QR4004	UN5214TX	TRANSISTOR	1	UNR521400L
QR4009	IMD16AT108	TRANSISTOR	1	B1GKCFEL0001
QR4011-13	B1GFGCAA0001	TRANSISTOR	3	
QR5201	UN5214TX	TRANSISTOR	1	UNR521400L
QR5221	UNR212100L	TRANSISTOR	1	
QR6006	B1GDCFJN0011	TRANSISTOR	1	
R1001	ERJ3GEYJ823V	1/10W 82K	1	D0GB823JA002
R1002	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1003	ERJ3GEYJ683V	1/10W 68K	1	D0GB683JA002
R1004	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1005	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R1006	ERJ3RBD563	1/16W 56K	1	ERJ3RBD563V
R1007	ERJ3RBD683V	1/16W 68K	1	
R1008	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1009	ERJ3GEYJ823V	1/10W 82K	1	D0GB823JA002
R1011	ERJ3GEYJ470V	1/10W 47	1	
R1012	ERJ3RBD123	1/16W 12K	1	
R1013	ERJ3RBD563	1/16W 56K	1	ERJ3RBD563V
R1014	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R1015	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R1016	ERJ3GEYJ183V	1/10W 18K	1	D0GB183JA002
R1017	ERJ3GEY0R00V	1/10W 0	1	
R1018	ERJ3GEYJ822V	1/10W 8.2K	1	D0GB822JA002
R1019	ERJ3GEYJ472V	1/10W 4.7K	1	
R1020	ERJ3GEYJ272V	1/10W 2.7K	1	
R1021	ERJ3GEYJ822V	1/10W 8.2K	1	D0GB822JA002
R1022	ERJ3RBD123	1/16W 12K	1	
R1023	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R1024,25	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R1026	ERJ3GEYJ470V	1/10W 47	1	
R1027,28	JAR0816P332D	3300	2	D0HB332ZA002
R1029	ERJ3RBD333V	1/16W 33K	1	
R1030	ERJ3GEYJ102V	1/10W 1K	1	
R1032	ERJ3RBD183	1/16W 18K	1	
R1033	ERJ3RBD102V	1/16W 1K	1	
R1034	JAR0816P822D	8200	1	D0HB822ZA002
R1035	ERJ3GEYJ181V	1/10W 180	1	
R1037	ERJ3RBD393	1/16W 39K	1	
R1038	ERJ3RBD102V	1/16W 1K	1	
R1039	JAR0816P822D	8200	1	D0HB822ZA002
R1040	ERJ3RBD122V	1/16W 1.2K	1	
R1041-45	ERJ3GEYJ102V	1/10W 1K	5	
R1047	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1051	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1060	ERJ3GEYJ151V	1/10W 150	1	
R1061	ERJ3GEYJ822V	1/10W 8.2K	1	D0GB822JA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R1063	ERJ3RBD123	1/16W 12K	1	
R1064	ERJ3RBD333V	1/16W 33K	1	
R1065	ERJ3GEYJ102V	1/10W 1K	1	
R1066,67	ERJ3GEY0R00V	1/10W 0	2	
R1086,87	ERJ3GEY0R00V	1/10W 0	2	
R1091	ERJ3RBD102V	1/16W 1K	1	
R1092	JAR0816P822D	8200	1	D0HB822ZA002
R1093	ERJ3GEYJ272V	1/10W 2.7K	1	
R1094	ERJ3RBD393	1/16W 39K	1	
R1102	ERJ3RBD683V	1/16W 68K	1	
R1103	ERJ3RBD102V	1/16W 1K	1	
R1104	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R1105	MCR03PZHJ561	1/10W 560	1	
R1106,07	ERJ3GEYJ220V	1/10W 22	2	
R1108	ERJ3GEY0R00V	1/10W 0	1	
R1402	ERJ3GEYJ104	1/10W 100K	1	
R1403	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1404	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R1481,82	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R1483	ERJ3GEYJ102V	1/10W 1K	1	
R1485	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R1486-88	ERJ3GEYJ103V	1/10W 10K	3	D0GB103JA002
R1489	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R1490,91	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R1608	ERJ3GEYJ102V	1/10W 1K	1	
R1621	D1BFR470A007	1/2W 0.47	1	
R1622	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R1623-25	ERJ3RBD104	1/16W 100K	3	
R1626	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R1627	ERJ3RBD104	1/16W 100K	1	
R1628	ERJ3RBD223	1/16W 22K	1	
R1629	ERJ3RBD104	1/16W 100K	1	
R1630	ERJ3GEYJ123V	1/10W 12K	1	
R1632	ERJ3RBD182V	1/16W 1.8K	1	
R1633	ERJ3GEYJ102V	1/10W 1K	1	
R1634	VRT0139J103	THERMISTOR	1	D4CC11030005
R1635	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R1638	ERJ3GEYJ102V	1/10W 1K	1	
R1640	ERJ3GEY0R00V	1/10W 0	1	
R1643	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R1844	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R1845	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R1850	ERJ3GEY0R00V	1/10W 0	1	
R2425	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R2501	ERJ3GEYJ271V	1/10W 270	1	
R2502	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R2504	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R2508-13	ERJ3GEYJ330V	1/10W 33	6	D0GB330JA002
R2516	ERJ3GEYJ682V	1/10W 6.8K	1	D0GB682JA002
R2517	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R2518	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R2519	ERJ14YKR39U	1/4W 3.9	1	
R2520	ERJ3GEYJ182V	1/10W 1.8K	1	
R2521-23	ERJ3GEYJ473V	1/10W 47K	3	D0GB473JA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R2524	ERJ14YJ1R0U	1/4W 1	1	
R2525	ERJ3GEY0R00V	1/10W 0	1	
R2527,28	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R3001	ERJ3GEYJ680	1/10W 68	1	ERJ3GEYJ680V
R3002	ERJ3GEYJ220V	1/10W 22	1	
R3003	ERJ3GEYJ330V	1/10W 33	1	D0GB330JA002
R3004	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R3005-07	ERJ3GEYJ221V	1/10W 220	3	
R3008	ERJ3GEYJ220V	1/10W 22	1	
R3009,10	ERJ3GEYJ100	1/10W 10	2	
R3101	ERJ3RBD333V	1/16W 33K	1	
R3102	ERJ3RBD152V	1/16W 1.5K	1	
R3103	ERJ3RBD222V	1/16W 2.2K	1	
R3104	ERJ3RBD151	1/16W 150	1	
R3105	ERJ3GEYJ220V	1/10W 22	1	
R3106	ERJ3RBD151	1/16W 150	1	
R3107	ERJ3GEYJ180V	1/10W 18	1	
R3201,02	ERJ3RED680	1/16W 68	2	ERJ3RED680V
R3203	ERJ3RED750V	1/16W 75	1	
R3207,08	ERJ3GEYJ102V	1/10W 1K	2	
R3209	ERJ3GEYJ222V	1/10W 2.2K	1	D0GB222JA002
R3210	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R3211	ERJ3GEYJ682V	1/10W 6.8K	1	D0GB682JA002
R3214	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R3215	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R3233	ERJ3GEY0R00V	1/10W 0	1	
R3239,40	ERJ3GEY0R00V	1/10W 0	2	
R4001,02	ERJ3GEYJ223V	1/10W 22K	2	D0GB223JA002
R4003,04	ERJ3GEYJ333V	1/10W 33K	2	D0GB333JA002
R4005	ERJ3GEYJ272V	1/10W 2.7K	1	
R4006	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R4009,10	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R4011,12	ERJ3GEYJ101	1/10W 100	2	D0GB101JA002
R4013-16	ERJ3GEYJ332V	1/10W 3.3K	4	D0GB332JA002
R4017,18	ERJ3GEYJ562V	1/10W 5.6K	2	D0GB562JA002
R4019,20	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R4021,22	ERJ8GEYJ270V	1/4W 27	2	D0GF270JA002
R4023,24	ERJ3GEYJ152V	1/10W 1.5K	2	
R4025,26	ERJ3GEYJ472V	1/10W 4.7K	2	
R4027	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R4028	ERJ3GEYJ183V	1/10W 18K	1	D0GB183JA002
R4029	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R4030	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R4031,32	ERJ3GEYJ222V	1/10W 2.2K	2	D0GB222JA002
R4033	ERJ3GEYJ394V	1/10W 390K	1	
R4036	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R4037-39	ERJ3GEYJ103V	1/10W 10K	3	D0GB103JA002
R4040	ERJ3GEY0R00V	1/10W 0	1	
R4041,42	MCR03PZHJ561	1/10W 560	2	
R4045	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R4049,50	ERJ3GEY0R00V	1/10W 0	2	
R4053,54	ERJ3GEYD153V	1/10W 15K	2	D0HB153ZA002
R4055	ERJ3GEYJ102V	1/10W 1K	1	
R4063,64	ERJ8GEYJ270V	1/4W 27	2	D0GF270JA002

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R4065,66	ERJ3GEYJ152V	1/10W 1.5K	2	
R4067,68	ERJ3GEYJ472V	1/10W 4.7K	2	
R4071,72	ERJ3GEYJ332V	1/10W 3.3K	2	D0GB332JA002
R4073,74	ERJ3GEYJ473V	1/10W 47K	2	D0GB473JA002
R4075,76	ERJ3GEY0R00V	1/10W 0	2	
R5201	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R5202	ERJ3GEYJ104	1/10W 100K	1	
R5203	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R5204,05	ERJ3GEYJ102V	1/10W 1K	2	
R5206,07	ERJ3GEY0R00V	1/10W 0	2	
R5208,09	ERJ3GEYJ331V	1/10W 330U	2	
R5210	ERJ3GEYJ100	1/10W 10	1	
R5211	ERJ3GEYJ2R2V	1/10W 2.2	1	D0GB2R2JA002
R5212	ERJ12YJ270U	1/2W 27	1	
R5213	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R5214	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R5215	ERJ3GEYJ2R2V	1/10W 2.2	1	D0GB2R2JA002
R5216	ERJ12YJ270U	1/2W 27	1	
R5217	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R5218	ERJ3GEYJ100	1/10W 10	1	
R5219,20	ERJ3RED910	1/16W 91	2	
R5221	ERJ3GEYJ102V	1/10W 1K	1	
R6001	ERJ3GEYJ102V	1/10W 1K	1	
R6002	ERJ3GEYJ821V	1/10W 820	1	
R6004	ERJ3GEYJ220V	1/10W 22	1	
R6005	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6008	ERJ3RBD102V	1/16W 1K	1	
R6009	ERJ3RBD333V	1/16W 33K	1	
R6012	ERJ3RBD333V	1/16W 33K	1	
R6013	ERJ3GEY0R00V	1/10W 0	1	
R6014	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6015	MCR03PZHJ561	1/10W 560	1	
R6018	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6021	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6022	ERJ3GEYJ102V	1/10W 1K	1	
R6023	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R6024	ERJ3GEYJ102V	1/10W 1K	1	
R6025	ERJ3GEYJ273V	1/10W 27K	1	D0GB273JA002
R6026	ERJ3GEYJ104	1/10W 100K	1	
R6027	ERJ3GEYJ221V	1/10W 220	1	
R6028	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6029	ERJ3GEYJ821V	1/10W 820	1	
R6031	ERJ3GEYJ102V	1/10W 1K	1	
R6032	ERJ3GEYJ122	1/10W 1.2K	1	
R6033	ERJ3GEYJ152V	1/10W 1.5K	1	
R6034	ERJ3GEYJ182V	1/10W 1.8K	1	
R6035	ERJ3GEYJ222V	1/10W 2.2K	1	D0GB222JA002
R6036	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R6037	ERJ3GEYJ472V	1/10W 4.7K	1	
R6039	JAR0816P103D	1/16W 10K	1	D0HB103ZA002
R6040	VRT0139J103	THERMISTOR	1	D4CC11030005
R6041	ERJ3GEYJ331V	1/10W 330U	1	
R6046	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R6201	ERJ3GEYJ102V	1/10W 1K	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R6351	ERJ3GEYJ101	1/10W 100	1	D0GB101JA002
R6502	ERJ3GEYJ221V	1/10W 220	1	
R6503	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R6504	ERJ3GEY0R00V	1/10W 0	1	
R6506	ERJ3GEYJ221V	1/10W 220	1	
R6508-10	ERJ3GEYJ221V	1/10W 220	3	
R6801	ERJ3GEYJ122	1/10W 1.2K	1	
R6802	ERJ3GEYJ152V	1/10W 1.5K	1	
R6803	ERJ3GEYJ182V	1/10W 1.8K	1	
R6804	ERJ3GEYJ222V	1/10W 2.2K	1	D0GB222JA002
R6805	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R6806	ERJ3GEYJ472V	1/10W 4.7K	1	
R6807	ERJ3GEYJ682V	1/10W 6.8K	1	D0GB682JA002
R6808	ERJ3GEYJ123V	1/10W 12K	1	
R6809	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R8001	ERJ3GEYJ222V	1/10W 2.2K	1	D0GB222JA002
R8002	ERJ3GEYJ472V	1/10W 4.7K	1	
R8006-08	ERJ3GEYJ101	1/10W 100	3	D0GB101JA002
R8009	ERJ3GEYJ105V	1/10W 1M	1	
R8010	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R8011	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8014,15	ERJ3GEY0R00V	1/10W 0	2	
R8036	ERJ3GEY0R00V	1/10W 0	1	
R8038	ERJ3RBD272	1/16W 2.7K	1	
R8039	ERJ3RBD182V	1/16W 1.8K	1	
R8040	ERJ3RBD102V	1/16W 1K	1	
R8042	MCR03PZHJ561	1/10W 560	1	
R8045	MCR03PZHJ561	1/10W 560	1	
R8046	ERJ3GEYJ333V	1/10W 33K	1	D0GB333JA002
R8047	ERJ3GEYJ273V	1/10W 27K	1	D0GB273JA002
R8048	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R8049	ERJ3GEYJ102V	1/10W 1K	1	
R8202	ERJ3GEY0R00V	1/10W 0	1	
R8203	ERJ3GEYJ472V	1/10W 4.7K	1	
R8205	ERJ3GEYJ102V	1/10W 1K	1	
R8209,10	ERJ3GEYJ102V	1/10W 1K	2	
R8212-14	ERJ3GEYJ102V	1/10W 1K	3	
R8218	ERJ3GEYJ102V	1/10W 1K	1	
R8219-22	ERJ3GEYJ101	1/10W 100	4	D0GB101JA002
R8225	ERJ3GEYJ392V	1/10W 3.9K	1	
R8226	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R8227	ERJ3GEYJ273V	1/10W 27K	1	D0GB273JA002
R8230,31	ERJ3GEYJ393V	1/10W 39K	2	D0GB393JA002
R8232	ERJ3GEYJ823V	1/10W 82K	1	D0GB823JA002
R8233	ERJ3GEY0R00V	1/10W 0	1	
R8235	ERJ3GEYJ823V	1/10W 82K	1	D0GB823JA002
R8236	ERJ3GEYJ332V	1/10W 3.3K	1	D0GB332JA002
R8237	ERJ3GEYJ152V	1/10W 1.5K	1	
R8238	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8401	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R8402	ERJ3GEYJ184V	1/10W 180K	1	
R8403	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R8404	ERJ3GEYD153V	1/10W 15K	1	D0HB153ZA002
R8405,06	ERJ3GEYJ563V	1/10W 56K	2	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
R8407	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R8408	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8409	ERJ3GEYJ183V	1/10W 18K	1	D0GB183JA002
R8410	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8411	ERJ3GEYJ472V	1/10W 4.7K	1	
R8413	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8425	ERJ3GEYJ470V	1/10W 47	1	
R8428,29	ERJ3GEYJ123V	1/10W 12K	2	
R8430	ERJ3GEYJ470V	1/10W 47	1	
R8433	ERJ3GEY0R00V	1/10W 0	1	
R8605	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8606	ERJ3GEYJ105V	1/10W 1M	1	
R8607	ERJ3GEYJ683V	1/10W 68K	1	D0GB683JA002
R8608	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8609	ERJ3GEYJ473V	1/10W 47K	1	D0GB473JA002
R8610	ERJ3GEYJ683V	1/10W 68K	1	D0GB683JA002
R8611	ERJ3GEYJ223V	1/10W 22K	1	D0GB223JA002
R8612	ERJ3GEYJ103V	1/10W 10K	1	D0GB103JA002
R8613	ERJ3GEYJ563V	1/10W 56K	1	
R8614,15	ERJ3GEYJ103V	1/10W 10K	2	D0GB103JA002
R8616	ERJ3GEYJ474V	1/10W 470K	1	
R8902	ERJ3GEY0R00V	1/10W 0	1	
RA2501	EXBV4V473J	RESISTOR-RESISTOR	1	EXBV4V473JV
RA2503,04	EXBV4V473J	RESISTOR-RESISTOR	2	EXBV4V473JV
RA3001	EXBV4V103JV	RESISTOR-RESISTOR	1	
RA3002,03	EXBV4V472JV	RESISTOR-RESISTOR	2	
RA3005-07	EXBV4V103JV	RESISTOR-RESISTOR	3	
RA6001	EXBV4V103JV	RESISTOR-RESISTOR	1	
RA6351	EXBV4V472JV	RESISTOR-RESISTOR	1	
S6002	K0H1BA000432	SWITCH	1	
S6003	K0H1BA000432	SWITCH	1	
S6004	K0H1BA000432	SWITCH	1	
S6005	K0H1BA000432	SWITCH	1	
S6006	K0H1BA000432	SWITCH	1	
S6007	K0H1BA000432	SWITCH	1	
S6801	K0H1BA000432	SWITCH	1	
S6802	K0H1BA000432	SWITCH	1	
S6803	K0H1BA000432	SWITCH	1	
S6804	K0H1BA000432	SWITCH	1	
S6805	K0H1BA000432	SWITCH	1	
S6806	K0H1BA000432	SWITCH	1	
S6807	K0H1BA000432	SWITCH	1	
S6808	K0H1BA000432	SWITCH	1	
S6809	K0H1BA000432	SWITCH	1	
SW5201	ESE11MV9T	SWITCH	1	
SW5202	ESE11MV9T	SWITCH	1	
SW6002	K0C115A00002	SWITCH	1	
SW6003	ESE11MV9T	SWITCH	1	
SW6004	ESE23F101	SWITCH	1	
SW6005	ESE23F101	SWITCH	1	

Ref. No.	Part No.	Part Name & Description	Pcs	Remarks
T1101	G5ZZ00000071	TRANSFORMER	1	
X6001	RSXY8M00M07T	CERAMIC OSCILLATOR	1	H2D800400005
X6501	H0J368500023	CRYSTAL OSCILLATOR	1	
X8001	VSX0671	CRYSTAL OSCILLATOR	1	H0J357400029

20. Schematic Diagram for printing with A4

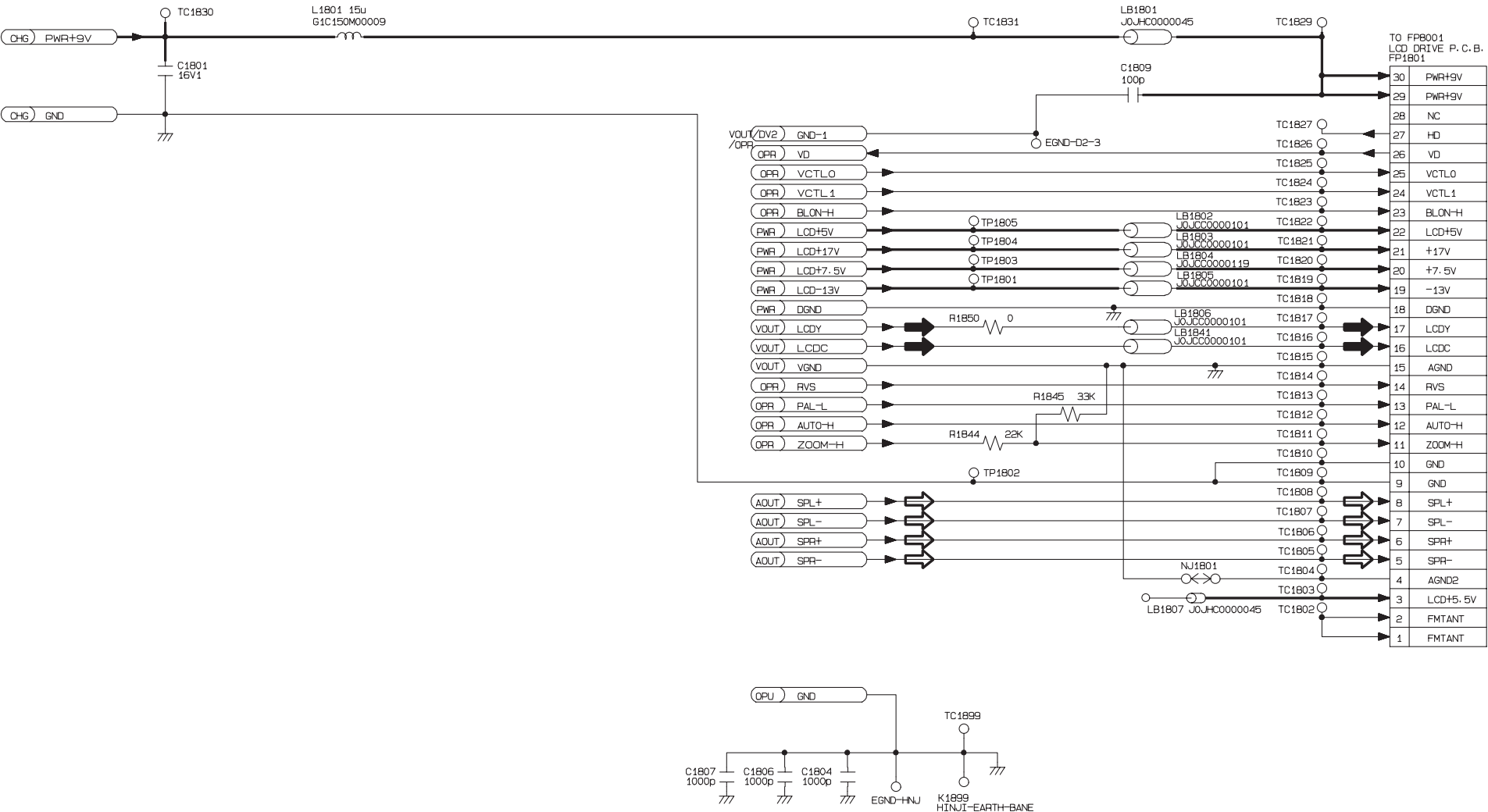
HP040400000HP

Ref No.	IC8001																				
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
PLAY	2.7	2.1	2.1	2.1	2.1	2.1	5.1	2.1	0	0	0	3.4	3.5	3.4	2.1	2.1	2.1	0	0.7	2.6	2.5
STOP	2.7	2.1	2.1	2.1	2.1	5.1	2.1	0	0	0	3.4	3.5	3.4	2.1	2.1	2.1	0	0	2.6	2.5	
Ref No.	IC8001																				
MODE	21	22	23	24	25	26	27	28	29	39	31	32	33	34	35	36	37	38	39	40	
PLAY	2.6	2.5	0	2.5	7.3	2.6	2.5	4.0	3.3	2.2	3.3	3.0	0.9	0.5	3.3	1.7	0	0	4.9	3.1	
STOP	2.6	2.6	0	2.5	7.3	2.6	2.5	4.0	3.3	2.2	3.3	3.0	0.9	0.5	3.3	1.7	0	0	4.9	3.1	
Ref No.	IC8001																				
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	
PLAY	0	2.8	1.8	5.1	0	3.7	4.9	4.9	3.1	1.8	1.7	3.1	2.4	2.4	2.7	4.3	3.0	5.1	0	4.8	
STOP	0	2.8	1.8	5.1	0	3.7	4.9	4.9	3.1	1.8	1.7	2.9	2.2	2.2	2.7	4.3	3.0	5.1	0	4.8	
Ref No.	IC8001																				
MODE	61	62	63	64																	
PLAY	2.5	1.6	2.1	2.7																	
STOP	2.4	1.6	2.1	2.9																	
Ref No.	IC8201																				
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
PLAY	0.5	3.0	0	3.0	3.3	3.1	3.3	0.7	0	3.3	3.3	0	2.5	1.7	0	0.6	0.1	0.1	0.1	0.1	
STOP	0.5	3.0	0	0.6	3.3	3.1	3.3	0	0	3.3	3.3	0	2.5	1.7	0	0.6	0.1	0.1	0.1	0.1	
Ref No.	IC8201																				
MODE	21	22	23	24	25	26	27	28	29	39	31	32	33	34	35	36	37	38	39	40	
PLAY	0.2	0	0	0.1	1.4	0	1.4	2.5	1.4	3.3	0	3.3	1.6	0	3.3	1.6	1.6	0	3.3	3.3	
STOP	0.4	0	0	0.1	1.3	0	1.3	2.5	1.3	3.3	0	3.3	1.6	0	3.3	1.6	1.6	0	3.3	3.2	
Ref No.	IC8201										IC8202										
MODE	41	42	43	44	45	46	47	48			1	2	3	4	5	6	7	8			
PLAY	0	0	3.3	3.3	3.3	0	3.3	0			0.5	0.1	0.1	0	3.3	3.2	3.3	3.3			
STOP	0	0.1	3.3	3.3	3.3	0	3.3	0			0.5	0.1	0.1	0	3.3	3.2	3.0	3.3			
Ref No.	IC8401										IC8403										
MODE	1	2	3	4	5	6	7	8			1	2	3	4	5	6	7	8			
PLAY	0	0	0	0	4.9	4.9	0	5.1			-2.8	-2.8	-2.8	-12.9	1.5	1.5	1.0	7.3			
STOP	0	0	0	0	4.9	4.9	0	5.1			-2.8	-2.7	-2.8	-12.9	1.5	1.5	1.0	7.3			
Ref No.	IC8602										IC8801					IC8802					
MODE	1	2	3	4	5	6	7	8			1	2	3		1	2	3				
PLAY	1.8	1.5	1.5	0	1.7	1.7	11.0	17.0			5.1	0	7.3		3.3	0	4.9				
STOP	1.8	1.5	1.5	0	1.7	1.7	11.0	17.0			5.1	0	7.3		3.3	0	4.9				
Ref No.	Q8001				Q8002				Q8003				Q8201				Q8202				
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B		
PLAY	1.4	5.1	2.0		3.1	5.1	2.8		2.6	0	3.2		0.5	3.2	0.5		0.5	0.5	1.0		
STOP	1.3	5.1	1.9		2.9	5.1	2.8		2.3	5.1	2.9		0.5	3.2	0.5		0.5	0.5	1.0		
Ref No.	Q8401				Q8402				Q8406												
MODE	E	C	B		E	C	B		1	2	3	4	5	6							
PLAY	1.0	-12.7	0.4		1.0	7.1	1.5		0.4	1.0	-12.9	1.5	1.0	7.3							
STOP	1.0	-12.7	0.4		1.0	7.1	1.5		0.4	1.0	-12.9	1.5	1.0	7.3							

G
F
E
D
C
B
A

II

← VIDEO SIGNAL
← AUDIO SIGNAL



- A:CHG SECTION
- B:PWR SECTION
- C:SRV SECTION
- D:OPU SECTION
- E:DV2 SECTION
- F:VOUT SECTION
- G:AOUT SECTION
- H:OPR SECTION
- I:LCD SECTION

Ref No.	IC1001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	0.3	9.0	9.3	9.3	0	0.4	8.9	9.3	9.2	0	0	0.3	2.1	1.8	1.1	1.4	1.0	1.0	1.6	1.1
STOP	0.3	9.0	9.3	9.3	0	0.3	8.9	9.3	9.2	0.1	0	0.3	2.1	1.8	1.1	1.4	1.0	1.0	1.6	1.1
Ref No.	IC1001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.3	1.0	1.0	1.5	1.1	1.9	1.0	1.7	0	0	0	9.3	2.5	1.0	1.0	1.2	1.1	1.8	1.1	1.4
STOP	1.3	1.0	1.0	1.4	1.1	1.9	1.0	1.7	0	0	0	9.3	2.5	1.0	1.0	1.2	1.1	1.8	1.1	1.4
Ref No.	IC1001										IC1003									
MODE	41	42	43	44	45	46	47	48		1	2	3	4	5	6					
PLAY	1.0	1.0	1.7	0	4.9	4.9	4.9	4.9		4.9	0	1.3	5.0	0	5.2					
STOP	1.0	1.0	1.7	0	4.9	4.9	4.9	4.9		4.9	0	1.3	5.0	0	5.2					
Ref No.	IC1004					IC1101					IC1401									
MODE	1	2	3	4	5		1	2	3	4	5		1	2	3	4	5	6	7	8
PLAY	5.2	0	5.2	0	5.0		5.2	0	4.9	0	5.0		9.6	9.6	9.6	1.0	9.6	9.6	9.6	9.6
STOP	5.2	0	5.2	0	5.0		5.2	0	4.9	0	5.0		9.6	9.6	9.6	1.0	9.6	9.6	9.6	9.6
Ref No.	IC1481					IC1482					IC1483									
MODE	1	2	3	4		1	2	3	4		1	2	3	4	5					
PLAY	5.2	8.8	0	0		5.2	8.1	0	0		8.1	0	5.2	0	5.0					
STOP	5.2	8.8	0.2	0		5.1	8.0	0	0		8.0	0	5.0	0.1	5.0					
Ref No.	IC1601																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	1.3	1.6	5.0	9.5	4.2	0.3	0	1.0	3.8	0.4	4.2	0.3	4.4	4.4	0	9.1				
STOP	1.3	1.6	5.0	9.5	4.2	0.3	1.0	1.0	3.8	0.4	4.2	0.3	4.7	4.6	0	9.1				
Ref No.	IC1602																			
MODE	1	2	3	4																
PLAY	5.0	3.8	0	0																
STOP	5.0	3.8	0	0																
Ref No.	IC2501																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	5.2	0	5.0	1.5	1.8	0.5	0	0.1	2.7	0	0	0	1.6	5.0	8.3	5.2	5.2	2.9	7.0	1.4
STOP	5.2	0	5.0	1.6	1.6	0	0	0	0	0	0	0	1.6	5.0	4.9	5.2	5.2	0.2	4.9	1.6
Ref No.	IC2501																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32								
PLAY	1.7	0.5	0	0	2.6	0	0	0	1.5	0	2.5	5.2								
STOP	1.6	0	0	0	0	0	0	0	1.6	0	0	5.2								
Ref No.	IC2502																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	2.7	0	5.2	1.2	1.2	1.2	0	0	1.7	1.7	1.9	2.9	3.4	0	5.2	0	0	1.3	1.6	1.6
STOP	0	0	5.2	0.4	0.4	0.4	0	0	0	0	1.3	2.9	0	0	5.2	0	0	0	0	1.6
Ref No.	IC3001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	2.7	2.6	0	2.7	2.6	3.2	0	2.6	0	2.8	2.7	3.2	2.8	2.6	2.9	0	2.6	2.3	3.2	0
STOP	2.9	2.9	0	3.0	3.1	3.2	3.0	3.0	0	3.1	3.0	3.2	2.8	0	2.8	0	3.0	2.9	3.2	0
Ref No.	IC3001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	0	3.2	2.3	1.5	2.0	1.1	2.1	3.2	0	1.8	0.9	0.8	1.5	3.2	0	2.2	1.8	1.9	1.5	1.9
STOP	0	0	0	1.5	2.8	1.1	2.9	3.2	0	2.7	0.4	0.5	0	0	0	2.6	2.0	2.5	1.3	2.0
Ref No.	IC3001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
PLAY	1.1	0	0.5	0	0	0	0	3.2	0	2.2	2.1	1.7	3.2	3.2	0	2.7	3.2	3.2	3.2	3.2
STOP	0.5	0.5	0.4	1.1	2.2	2.8	0.5	3.2	0	2.8	2.7	2.5	3.2	3.2	3.2	2.7	3.2	3.1	3.2	3.2
Ref No.	IC3001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	3.2	3.2	0	0	3.2	3.0	0	2.9	2.6	1.2	0.1	1.6	3.2	0	1.5	1.8	1.7	1.6	1.5	1.8
STOP	0	0	0	0	0	3.0	0	2.9	2.7	0	3.2	0	3.2	0	0	0	0	1.6	0	1.6
Ref No.	IC3001																			
MODE	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
PLAY	1.9	1.3	2.9	3.2	0	3.2	0	0	1.1	0	0	0	0	0	0	0	0	3.2	0	0
STOP	1.3	1.9	2.9	3.2	0	3.2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ref No.	IC3001																			
MODE	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
PLAY	2.3	2.0	1.8	0.2	0	0	3.2	0	2.0	1.8	1.8	0.1	0.1	1.6	1.6	1.6	1.6	3.2	1.8	1.6
STOP	2.3	2.0	0	0	0	1.7	3.2	0	2.0	0	1.8	0	0	0	0	1.6	1.6	3.2	1.8	1.6
Ref No.	IC3001																			
MODE	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140
PLAY	1.4	0	0.2	1.0	0.2	0	2.2	1.6	2.7	2.6	2.6	0	2.7	2.6	2.4	2.4	2.4	2.5	0	1.6
STOP	1.4	0	0	0	0	0	2.2	1.6	2.2	2.2	2.2	2.2	2.2	2.2	0	0	2.2	0	1.6	1.6
Ref No.	IC3001																			
MODE	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160
PLAY	3.2	1.2	1.8	2.1	0	1.6	1.6	1.6	3.2	3.2	3.2	3.2	1.3	1.3	2.2	0.5	0	0.8	3.2	0
STOP	3.2	1.2	1.9	2.1	0	1.6	1.6	1.6	3.2	3.2	3.2	3.2	1.3	1.3	1.3	0	0	0.8	3.2	0

Ref No.	IC3001																			
MODE	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180
PLAY	3.2	0	0.7	0	1.6	1.4	3.2	1.6	1.6	1.6	0.8	1.1	0	0	0	0.8	1.6	3.2	0	3.2
STOP	3.2	0	1.1	0	1.6	1.4	3.2	1.6	1.6	0	0	1.1	0	0	0	0	1.6	3.2	0	3.2
Ref No.	IC3001																			
MODE	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200
PLAY	0	3.2	0	0	0	0	0	0	0	0	0	0.8	1.6	0.8	1.3	0	1.0	1.3	1.3	1.2
STOP	0	3.2	0	0	0	0	0	0	0	3.2	0	0.9	1.5	0.7	1.4	0	0.8	1.4	1.3	1.2
Ref No.	IC3001																			
MODE	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220
PLAY	0	0	3.2	1.4	0	0	1.2	1.5	3.2	0.9	1.7	0.8	0	2.4	0	3.2	1.4	0	1.1	0
STOP	0	3.2	0.9	1.4	0	1.3	1.5	1.7	3.2	0	0	0.3	0	2.8	2.8	3.2	2.2	0	1.1	1.5
Ref No.	IC3001																			
MODE	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240
PLAY	0.5	0	1.5	0.5	3.2	1.7	0.3	1.5	0	0	3.2	1.6	0	1.7	0	1.1	0	0	3.2	2.9
STOP	0	0	1.5	0	3.2	1.5	0	1.4	0	0	3.2	1.5	0	2.8	0	1.1	0	0	3.2	3.0
Ref No.	IC3001																			
MODE	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256				
PLAY	1.6	0	1.6	3.1	3.1	3.2	0	3.1	2.4	0	2.4	2.6	0	2.6	3.2	2.7				
STOP	1.6	0	1.6	3.1	3.2	3.2	0	0	2.8	0	2.8	2.8	0	3.0	3.2	2.9				
Ref No.	IC3051																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	3.2	2.7	3.2	2.7	2.7	0	2.6	2.6	3.2	2.6	2.7	0	2.5	3.2	2.3	3.1	3.1	3.1	3.0	1.7
STOP	3.2	2.7	3.2	2.9	3.0	0	3.0	3.1	3.2	2.9	2.9	0	2.8	3.2	0	3.2	3.1	3.1	3.0	2.4
Ref No.	IC3051																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	1.6	0	0.2	0.5	0.4	1.6	3.2	0	1.4	1.5	1.7	1.5	0	0	0	0	3.2	1.6	2.3	0
STOP	1.6	0	0	0.1	0.1	2.0	3.2	0	1.5	1.5	1.5	1.5	0	0	0	0	3.2	1.6	2.6	0
Ref No.	IC3051																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54						
PLAY	0	2.7	3.2	2.7	2.7	0	2.6	2.7	3.2	2.7	2.9	0	2.4	0						
STOP	0	2.7	3.2	2.9	3.0	0	3.0	3.1	3.2	2.8	2.8	0	2.9	0						
Ref No.	IC3201																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	4.9	1.6	0	1.6	2.0	2.1	0	0	1.0	2.1	1.9	2.1	2.0	0	2.0	4.9				
STOP	4.9	1.5	0	1.5	1.7	1.8	1.7	0	0.2	1.8	1.6	2.1	2.0	0	2.0	4.9				
Ref No.	IC4001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16				
PLAY	1.6	0.8	1.6	0	3.2	5.0	2.5	2.5	0	2.5	0	0	3.2	2.7	3.2	1.6				
STOP	1.6	0	1.6	0	3.2	5.0	2.5	2.5	0	2.5	3.2	0	3.2	2.7	3.2	1.6				
Ref No.	IC4002								IC4003											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
PLAY	4.3	4.3	4.3	0	4.3	4.3	4.3	9.0		4.3	4.3	4.3	4.3	4.4	0	9.0	4.4			
STOP	4.3	4.3	4.3	0	4.3	4.3	4.3	9.0		4.3	4.3	4.3	4.3	4.4	0	9.0	4.4			
Ref No.	IC4004								IC4007					IC4009						
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5		1	2	3	4	5
PLAY	0	0	0	0	4.3	4.3	4.3	9.0		9.3	0	8.4	4.9	9.0		5.2	0	5.2	0	5.0
STOP	0	0	0	0	4.3	4.3	4.3	9.0		9.3	0	8.4	4.9	9.0		5.2	0	5.2	0	5.0
Ref No.	IC4010								IC4043											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
PLAY	0	0	0	0	0	1.6	0	3.2		2.3	2.4	0	0	0	5.0	2.4	2.3			
STOP	0	0	0	0	0	1.6	0	3.2		2.3	2.4	0	0	0	5.0	2.4	2.3			
Ref No.	IC4053								IC4054											
MODE	1	2	3	4	5	6	7	8		1	2	3	4	5	6	7	8			
PLAY	0	0	0	0	0	4.7	0	0		0	0	0	0	0	4.7	0	0			
STOP	0	0	0	0	0	4.7	0	0		0	0	0	0	0	4.7	0	0			
Ref No.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	5.0	5.0	5.0	5.0	0.3	0.2	0.2	5.0	2.3	2.3	0	0	4.9	0	0	4.9	0.2	3.4	1.9	4.9
STOP	5.0	5.0	5.0	5.0	0.8	0.8	0.8	5.0	2.3	2.3	0	0	4.9	0	0	4.9	0	3.6	1.8	4.9
Ref No.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
PLAY	5.0	0.2	4.9	5.0	1.2	4.0	4.3	0	4.9	0	5.0	4.9	4.9	5.0	4.8	0	0	4.9	4.9	0
STOP	4.9	0.8	4.9	5.0	1.2	4.2	4.5	0	4.9	0	4.9	4.9	4.9	4.9	4.8	0.8	0.8	4.9	4.9	0
Ref No.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	585	59	60
PLAY	5.0	4.9	4.9	4.9	4.9	4.9	0	4.9	4.9	5.0	5.0	0	5.2	4.9	5.0	4.9	4.9	4.9	4.9	0
STOP	5.0	4.9	4.9	4.9	4.9	4.9	0	4.9	4.9	4.9	4.9	0	5.2	4.9	4.9	4.9	4.9	4.9	4.9	0
Ref No.	IC6001																			
MODE	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
PLAY	4.9	4.8	0	0	4.9	0	0	0	0	5.0	5.0	0	0	0	0	4.9	4.9	5.0	5.0	5.0
STOP	4.9	4.8	0	0	4.9	0	0	0	0	0	5.0	0	0	0	0.1	4.9	0	4.9	4.9	4.9
Ref No.	IC6002					IC6003														
MODE	1	2	3	4		1	2	3												
PLAY	4.9	5.0	0	0		4.9	0	4.9												
STOP	4.9	5.0	0	0		4.9	0	4.9												
Ref No.	IC6006										IC6201									
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14		1	2	3	4	5
PLAY	3.3	3.3	4.9	0	0	0	0	4.5	2.9	2.9	4.1	2.6	2.6	5.0		0	0	0	3.2	3.2
STOP	3.3	3.3	4.9	0	0	0	0	4.5	2.9	2.9	4.2	2.7	2.7	5.0		0	0	0	3.2	3.2
Ref No.	IC6301																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
PLAY	2.6	0.8	1.1	2.1	1.0	1.4	0	0	0	0	3.2	3.2	0	0	0.2	0.	0.5	2.1	2.2	1.8
STOP	2.8	0.5	0.5	2.9	0.5	0.6	0.5	2.8	2.2	0	3.2	3.2	0	0	0.3	0.4	0.4	2.8	2.6	2.0

Ref No.	IC6301																							
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40				
PLAY	1.5	2.1	1.8	1.5	2.2	1.8	0	1.8	0.7	0.7	0.8	0.7	1.3	0.9	1.4	1.3	3.2	1.2	0.9	0				
STOP	1.5	2.7	1.9	1.3	2.8	2.5	0	2.5	0.6	0.7	0.9	0.5	1.5	0.6	1.4	1.2	3.2	1.2	0.7	1.4				
Ref No.	IC6301								IC6351															
MODE	41	42	43	44	45	46	47	48		1	2	3	4	5	6	7	8							
PLAY	1.2	1.3	1.5	1.6	1.7	0	3.2	1.8		0	0	0	0	3.2	3.2	0	3.2							
STOP	1.4	1.4	1.8	1.6	1.9	0	3.2	2.7		0	0	0	0	3.2	3.2	0	3.2							
Ref No.	IC6501																							
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16								
PLAY	3.2	0	1.6	1.4	3.2	0	1.5	1.5	1.4	1.5	0	3.2	1.4	3.2	1.5	3.2								
STOP	3.2	0	1.6	1.4	3.2	0	1.5	1.5	1.4	1.5	0	3.2	1.4	3.2	1.5	3.2								
Ref No.	Q1001				Q1002				Q1003				Q1004				Q1008							
MODE	E	C	B		E	C	B		E	C	B		E	C	B		S	D	G					
PLAY	9.3	1.2	9.2		9.3	2.3	9.0		9.3	4.9	8.9		9.3	4.7	9.3		0	0	5.2					
STOP	9.3	1.2	9.2		9.3	2.3	9.0		9.3	5.6	8.9		9.3	4.7	9.3		0	0	5.2					
Ref No.	Q1009				Q1010				Q1011				Q1101				Q1401							
MODE	S	D	G		S	D	G		S	D	G		E	C	B		E	C	B					
PLAY	0	0	5.2		0	0	5.2		0	0	5.2		0	10.4	0.3		0	0	4.9					
STOP	0	0	5.2		0	0	5.2		0	0	5.2		0	10.1	0.3		0	0	4.9					
Ref No.	Q1481				Q1621				Q1622				Q2501				Q3202							
MODE	E	C	B		E	C	B		E	C	B		S	D	G		E	C	B					
PLAY	8.8	8.8	8.1		9.5	4.6	9.1		0	0	4.9		0	0	0		1.7	0	1.1					
STOP	8.8	8.8	8.1		9.5	4.9	9.1		0	0	4.9		0	0	0		1.7	0	1.1					
Ref No.	Q5201				Q5202				Q5203				Q5204				Q5211							
MODE	E	C	B		E	C	B		S	D	G		S	D	G		E	C	B					
PLAY	0.4	3.8	1.0		0	4.9	0		0	0	3.2		0	0.2	0		4.4	2.2	3.8					
STOP	0	5.0	0		0	5.0	0		0	0	3.2		0	0	0		5.0	0	5.0					
Ref No.	Q5215																							
MODE	E	C	B																					
PLAY	4.9	0.1	4.9																					
STOP	5.0	0	5.0																					
Ref No.	QR1008				QR1009				QR1481				QR1482				QR1483							
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B					
PLAY	0	4.9	0.3		0	5.2	0		8.8	6.2	8.8		8.1	0	8.1		8.8	0.1	8.8					
STOP	0	4.9	0.3		0	5.2	0		8.8	6.2	8.8		8.0	0	8.0		8.8	0.1	8.8					
Ref No.	QR1604				QR1605				QR3201				QR4003				QR4004							
MODE	E	C	B		E	C	B		E	C	B		E	C	B		E	C	B					
PLAY	0	1.3	0		0	4.9	0		0	0.1	4.9		4.6	-0.9	4.5		0	4.5	0.1					
STOP	0	1.3	0		0	4.9	0		0	3.4	0		4.2	4.1	0		0	0	2.8					
Ref No.	QR4009								QR4011								QR4012							
MODE	1	2	3	4	5	6		1	2	3	4	5	6		1	2	3	4	5	6				
PLAY	9.3	4.9	0	0.1	4.9	9.3		0	-1.0	0	0	-1.0	0		0	-1.0	0	0	-0.8	0				
STOP	9.3	4.9	0	0.1	4.9	9.3		0	0.7	0	0	0.7	0		0	0.7	0	0	0.7	0				
Ref No.	QR4013								QR5201				QR5221				QR6006							
MODE	1	2	3	4	5	6		E	C	B		E	C	B		E	C	B						
PLAY	0	-1.0	0	0	-1.0	0		0	0	3.2		3.2	3.2	0.1		5.0	0	5.0						
STOP	0	0.7	0	0	0.7	0		0	0	3.2		3.2	-0.2	3.2		5.0	0	4.9						



ADDRESS INFORMATION
C...COMPONENT SIDE
F...FOIL SIDE

F

E

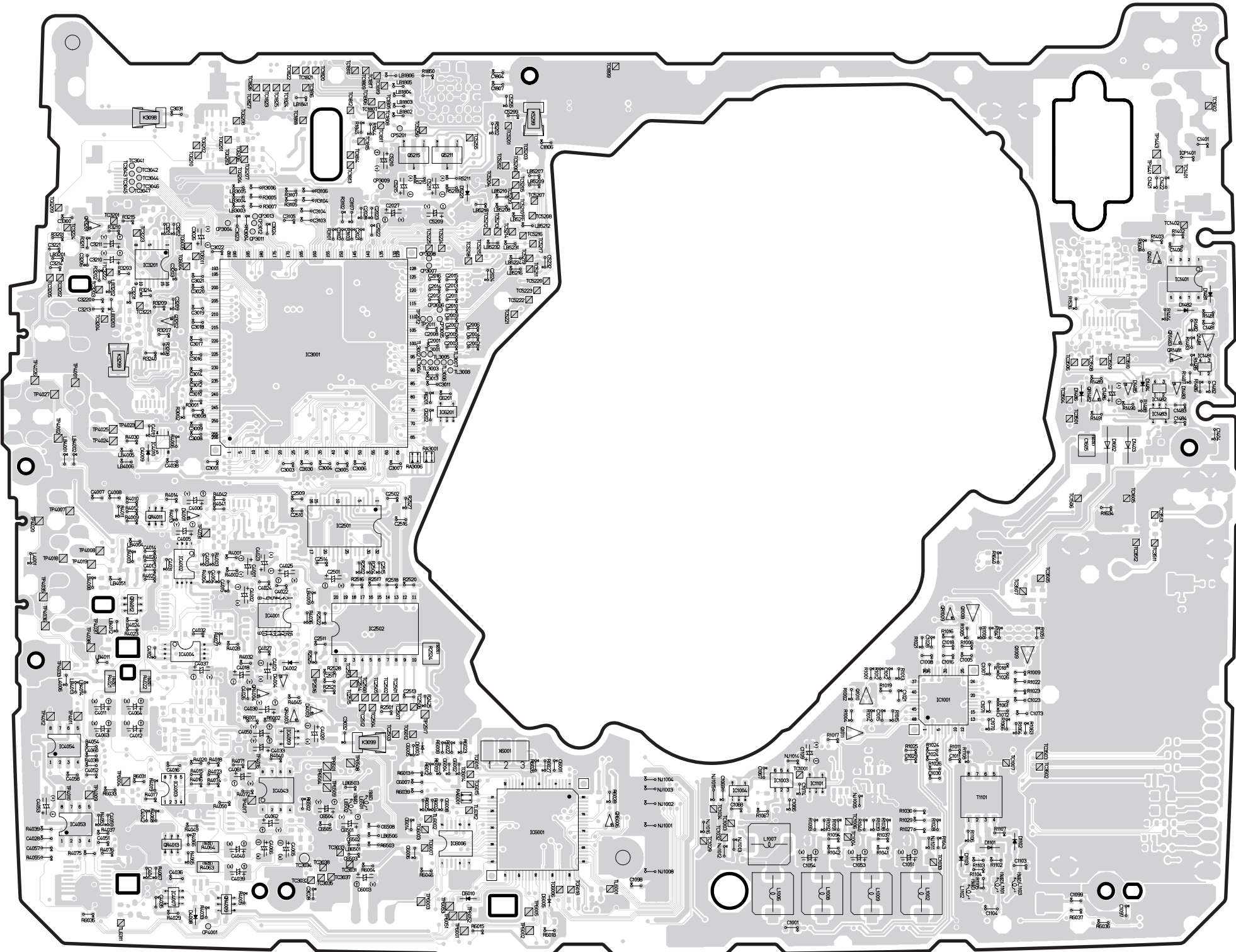
D

C

B

A

(FOIL SIDE)



Main P.C.B.

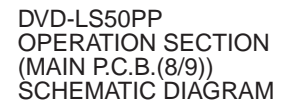
TC3201	E-2	F	TC6210	E-2	F	FP6001	D-6	C
TC3202	E-1	F	TL1631	D-1	C			
TC3203	E-1	F	TL3001	D-3	F			
TC3204	D-1	F	TL3002	D-3	F			
TC3205	E-1	F	TL3003	D-3	F			
TC3221	D-2	F	TL3004	D-3	F			
TC3222	E-2	F	TL3005	D-3	F			
TC3223	E-2	F	TL3006	D-3	F			
TC3224	E-1	F	TL3007	D-3	F			
TC3501	D-7	F	TL3008	D-3	F			
TC3502	B-6	F	TL6001	A-4	F			
TC3503	B-6	F	TL6002	B-3	F			
TC3504	D-7	F	TL6311	A-2	F			
TC3505	C-6	F	TL6312	B-3	F			
TC3506	D-7	F	TP1441	E-7	F			
TC3507	C-6	F	TP1442	E-1	C			
TC3508	D-7	F	TP1443	E-7	F			
TC3509	D-7	F	TP1801	F-5	C			
TC3510	D-7	F	TP1802	F-4	C			
TC3511	C-7	F	TP1803	E-5	C			
TC3512	C-7	F	TP1804	E-5	C			
TC3513	C-7	F	TP1805	E-5	C			
TC5201	E-4	F	TP2011	D-3	F			
TC5202	E-4	F	TP2012	D-3	F			
TC5203	E-4	F	TP2516	C-3	F			
TC5204	E-4	F	TP2517	B-3	F			
TC5205	E-4	F	TP4001	D-1	F			
TC5206	E-4	F	TP4002	D-1	F			
TC5207	E-4	F	TP4007	C-1	F			
TC5208	E-4	F	TP4008	C-1	F			
TC5209	E-4	F	TP4009	B-1	F			
TC5210	E-4	F	TP4010	B-1	F			
TC5211	E-4	F	TP4011	B-1	F			
TC5212	E-4	F	TP4012	B-1	F			
TC5213	E-4	F	TP4013	D-7	C			
TC5214	E-4	F	TP4016	B-2	F			
TC5215	E-3	F	TP4017	B-2	F			
TC5216	E-4	F	TP4018	C-1	F			
TC5217	E-4	F	TP4019	C-1	F			
TC5218	E-3	F	TP4020	C-1	F			
TC5219	E-4	F	TP4023	D-2	F			
TC5220	E-4	F	TP4024	D-2	F			
TC5221	D-4	F	TP4025	D-2	F			
TC5222	D-4	F	TP4026	D-1	F			
TC5223	E-4	F	TP4027	D-1	F			
TC5224	E-3	F	TP4030	C-6	C			
TC5225	E-3	F	TP4031	C-2	F			
TC5255	E-3	F	TP4033	C-1	F			
TC5256	E-3	F	TP4035	C-1	F			
TC6003	B-3	F	TP4036	C-1	F			
TC6004	E-2	F	TP4037	C-1	F			
TC6005	E-2	F	TP4038	C-1	F			
TC6006	A-4	F	TP6001	A-3	F			
TC6007	B-3	F	TP6002	A-4	F			
TC6010	B-3	F	TP6003	A-3	F			
TC6011	E-2	F	TP6004	B-2	F			
TC6012	B-3	F	TP6005	A-4	F			
TC6014	B-3	F	TP6051	A-3	F			
TC6015	B-3	F	TP6052	A-3	F			
TC6018	A-4	F	TP6053	A-3	F			
TC6201	E-2	F	TP6501	B-3	F			
TC6202	E-2	F	TP6504	B-3	F			
TC6203	E-2	F	TP6508	B-3	F			
TC6204	E-2	F	TP6509	B-3	F			
TC6205	E-6	C	Connectors					
TC6206	E-2	F	FP1801	F-6	C			
TC6207	E-2	F	FP2501	B-5	C			
TC6208	E-2	F	FP3031	A-6	C			
TC6209	E-1	F	FP5201	E-5	C			

ADDRESS INFORMATION

C...COMPONENT SIDE

F...FOIL SIDE

1





DVD-LS50PP
OPTICAL PICK UP SECTION
(MAIN P.C.B.(4/9))
SCHEMATIC DIAGRAM

TRAVERSE
MECHANISM UNIT

MAIN P.C.B.

PICK-UP
UNIT

SPINDLE
MOTOR

STEPPING
MOTOR

FOCUS
COIL

TRACKING
COIL

IC2502
SPINDLE
MOTOR
DRIVE

IC2501
TRAVERSE
MOTOR
DRIVE

LED

REMOTE
CONTROL

KEY

IC6001
OPERATION
MPU

IC6501
CLOCK

IC6301
16Mbit
FLASH
ROM

IC6351
8Kbit
EEP ROM

IC3051
64Mbit
SDRAM

IC3001
DV2.1
FRONT-END PROCESSOR/
OPTICAL DISC CONTROLLER/
DIGITAL SERVO CONTROLLER/
AV DECODER

IC4001
AUDIO
D/A
CONVERTER

IC3201
VIDEO
DRIVE

HEADPHONE

FRONT L/R

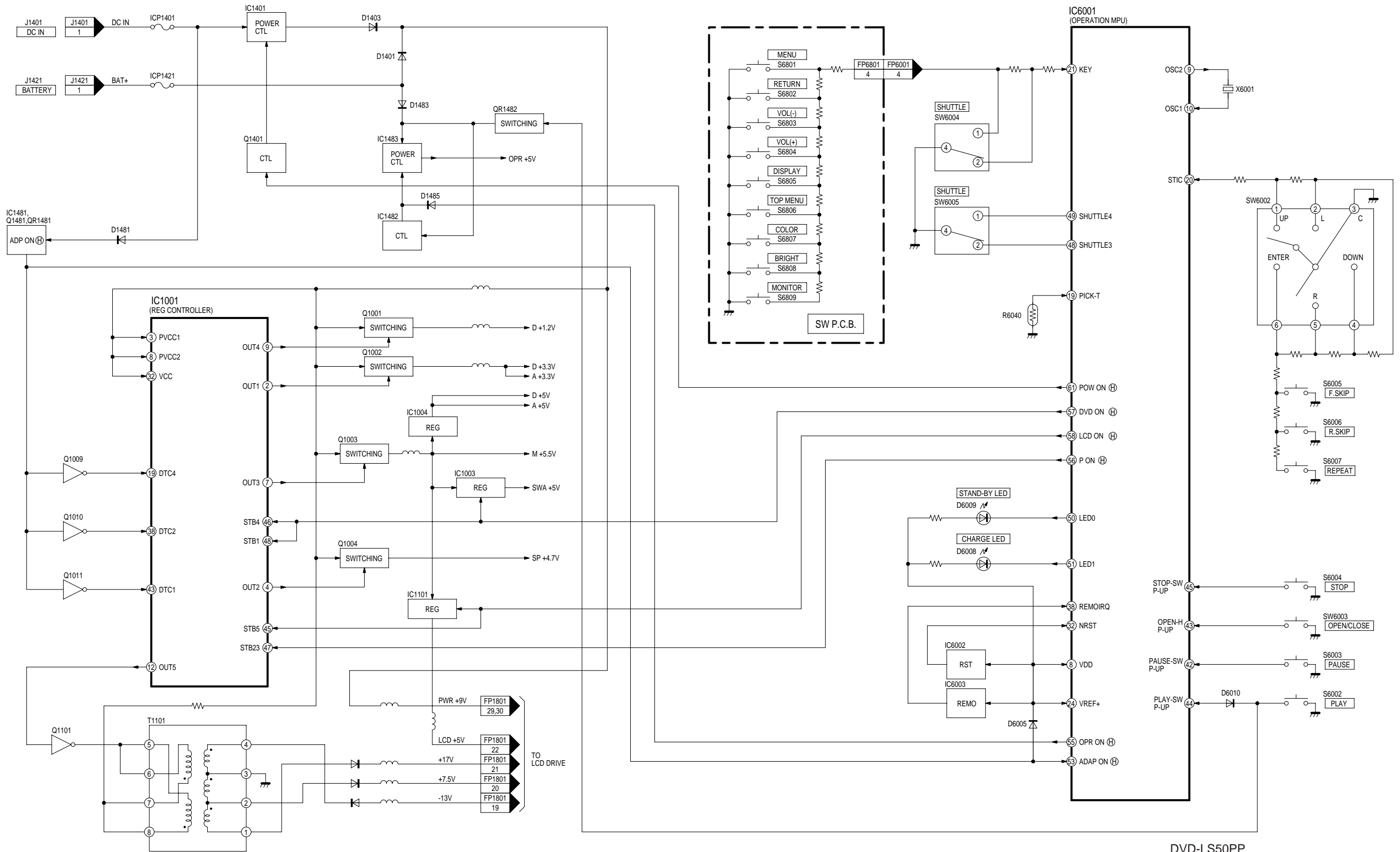
SPEAKER L/R

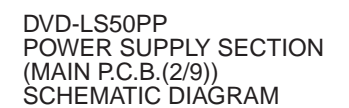
OPT OUT

LCD

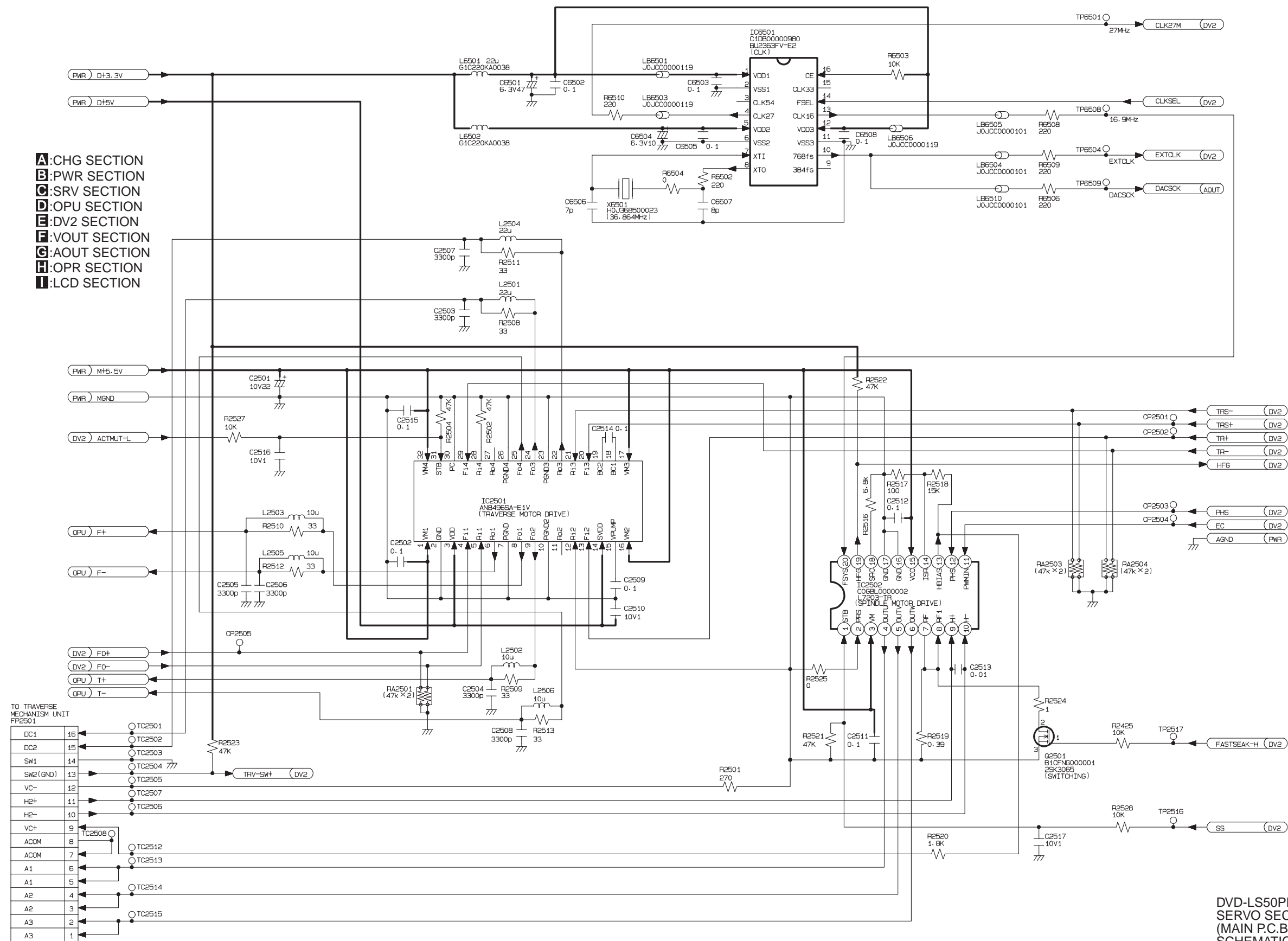
VIDEO OUT

DVD-LS50PP
OVERALL BLOCK DIAGRAM

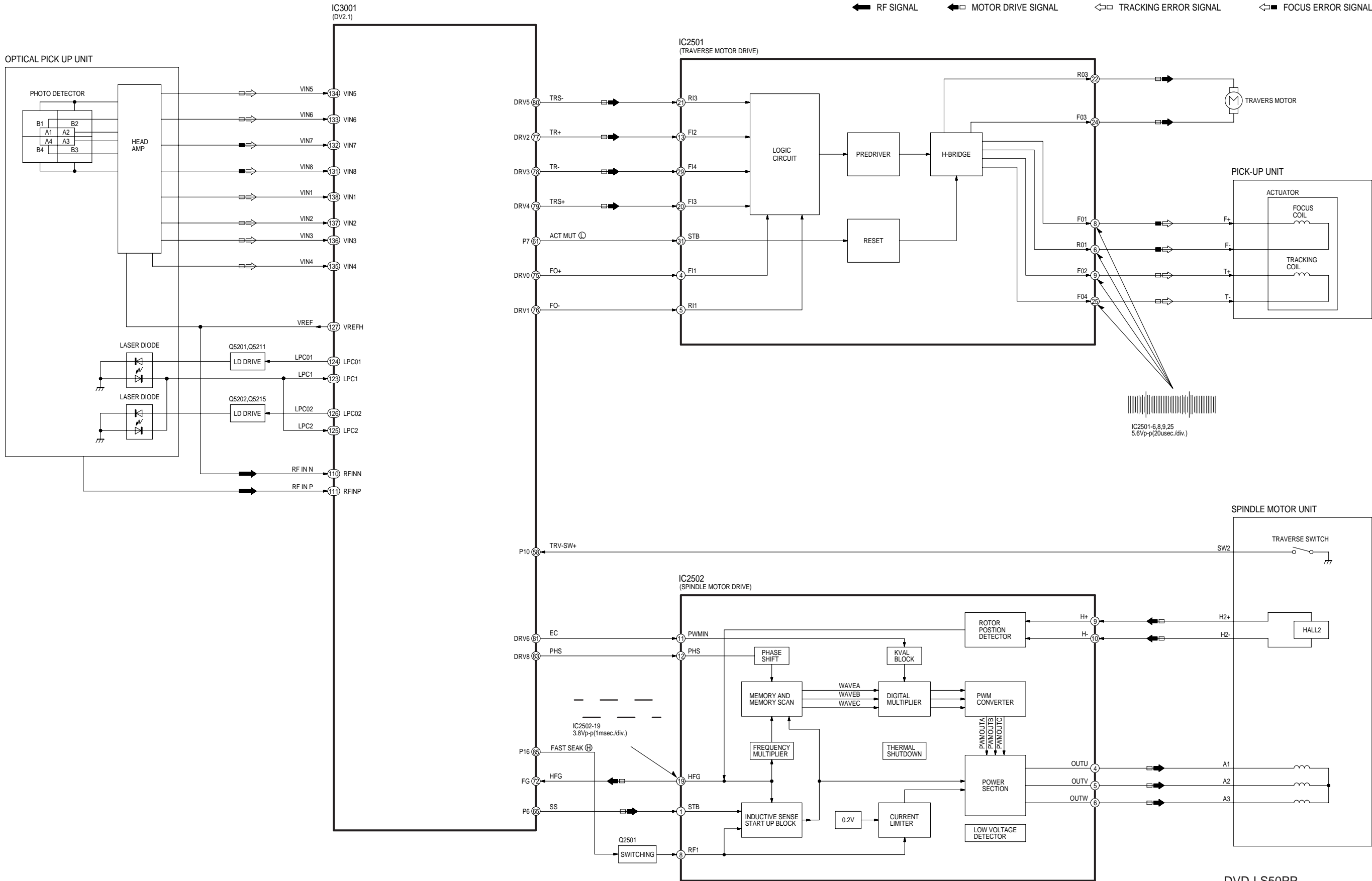




A:CHG SECTION
B:PWR SECTION
C:SRV SECTION
D:OPU SECTION
E:DV2 SECTION
F:VOUT SECTION
G:AOUT SECTION
H:OPR SECTION
I:LCD SECTION



DVD-LS50PP
 SERVO SECTION
 (MAIN P.C.B.(3/9))
 SCHEMATIC DIAGRAM



G

F

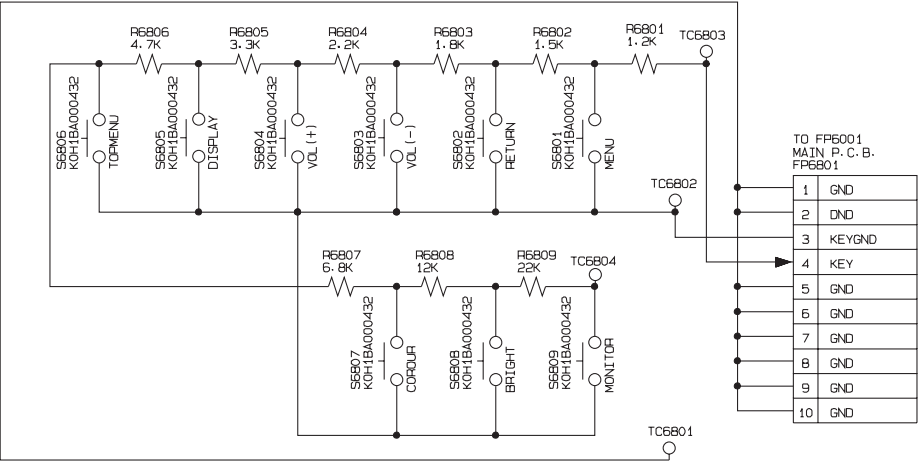
E

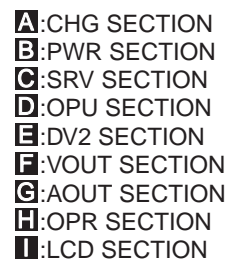
D

C

B

A



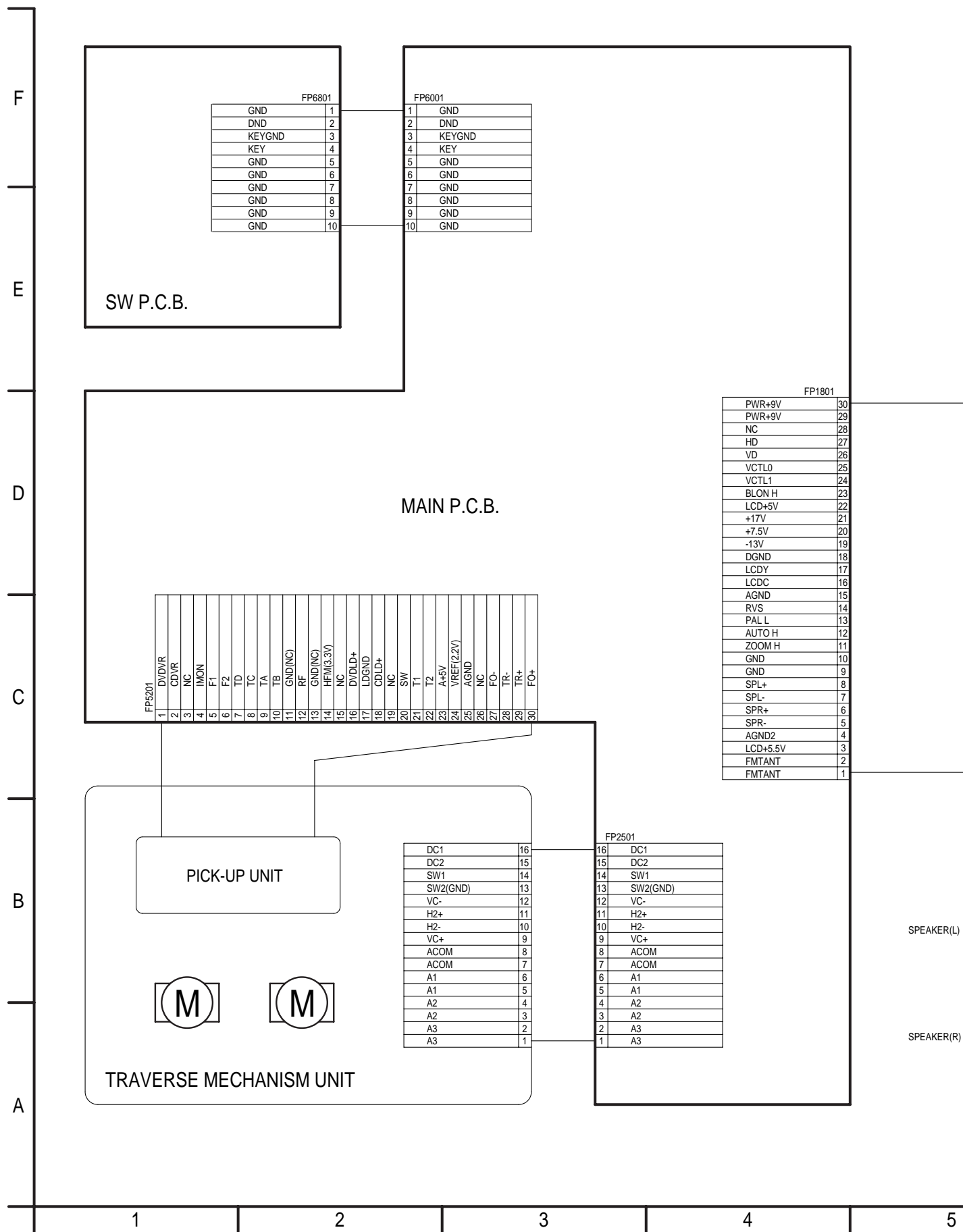


DVD-LS50PP
VIDEO OUT SECTION
(MAIN P.C.B.(6/9))
SCHEMATIC DIAGRAM

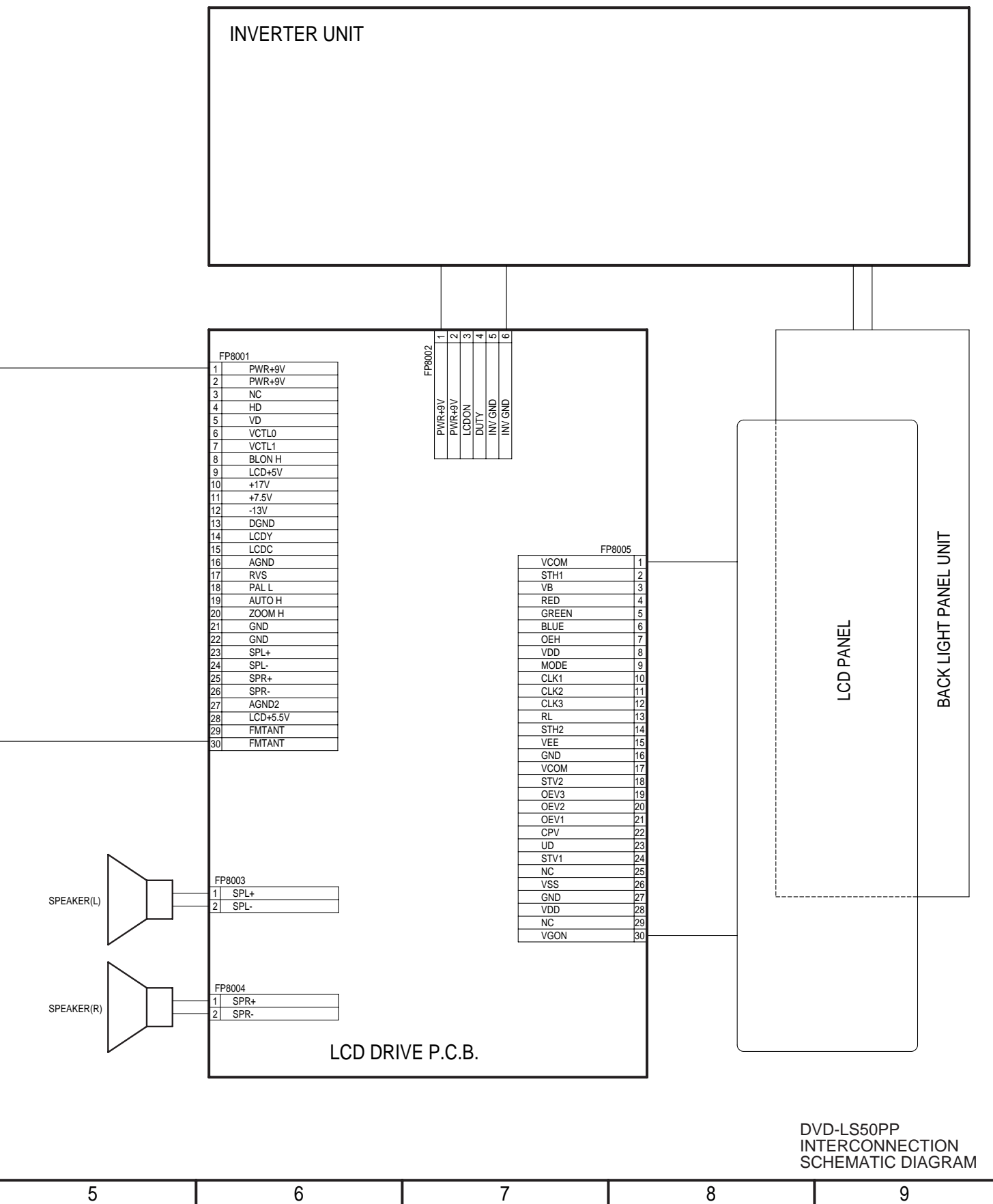


15 INTERCONNECTION SCHEMATIC DIAGRAM & SCHEMATIC D

15.1. INTERCONNECTION SCHEMATIC DIAGRAM




SCHEMATIC DIAGRAM NOTES



15.2. SCHEMATIC DIAGRAM NOTES

This schematic diagram may be modified at any time with the development of new technology.


Important safety notice:

Components identified by  mark have special characteristics important for safety.

Furthermore, special parts which have purpose of fire-retardant (resistors), high-quality sound (capacitors), low-noise (resistors), etc. are used. When replacing any of components, be sure to use only manufacture's specified parts shown in the parts list.

Important safety notice:

There are special components used in this equipment which are important for safety.

These parts are marked by  in the schematic diagrams. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.

Caution!

IC and LSI are sensitive to static electricity.

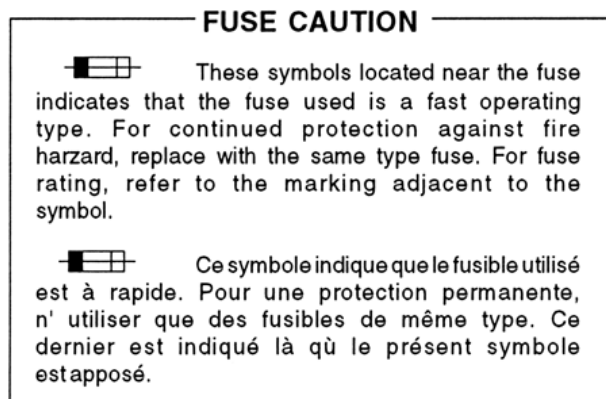
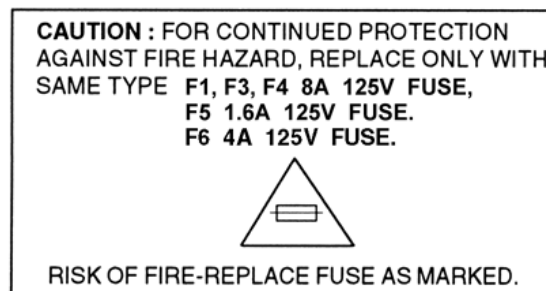
Secondary trouble can be prevented by taking care during repair.

Cover the parts boxes made of plastics with aluminum foil.

Ground the soldering iron.

Put a conductive mat on the work table.

Do not touch the legs of IC or LSI with the fingers directly.



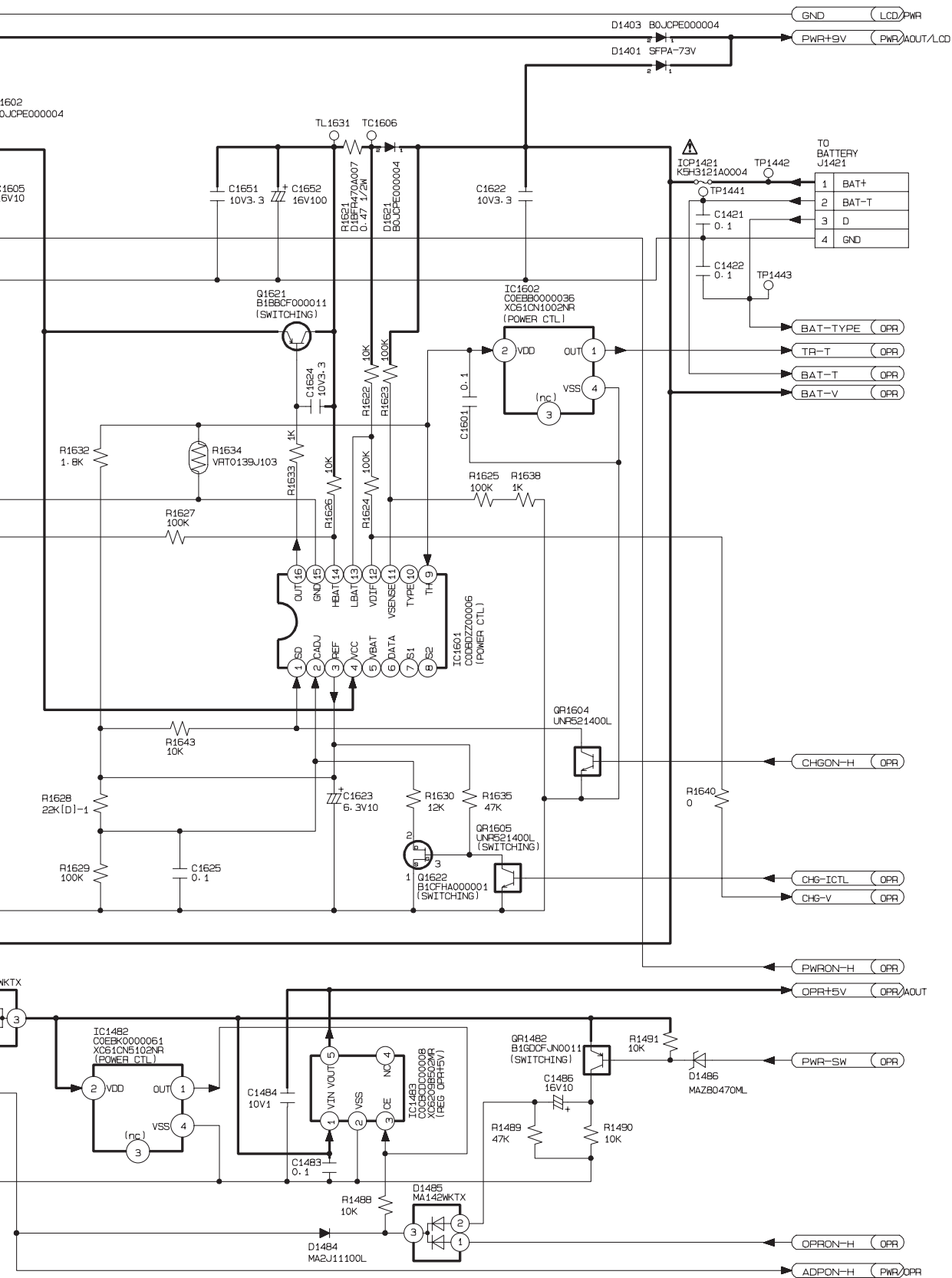


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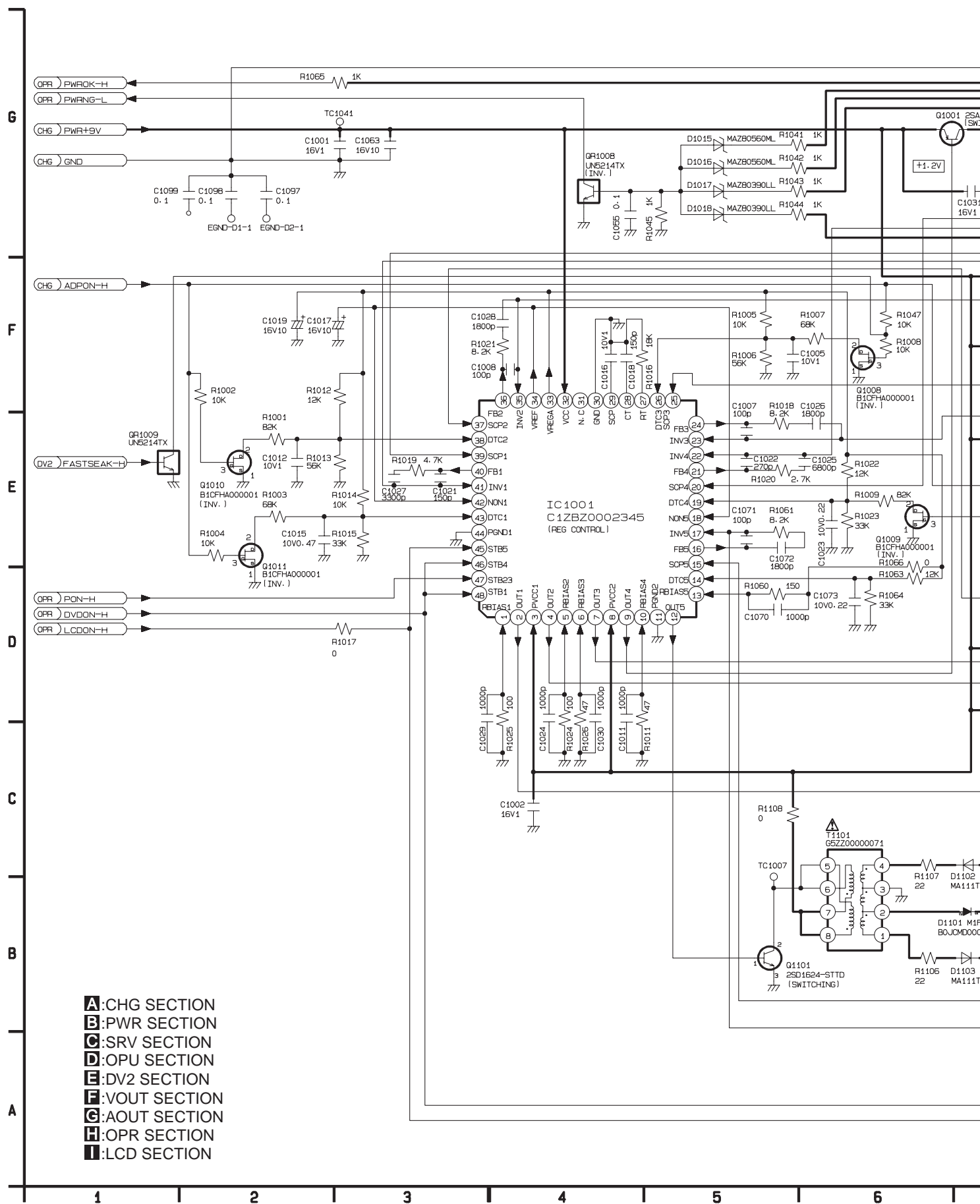
ith
of

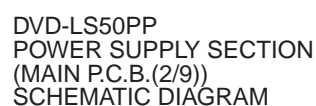
16.1. CHARGE BATTERY SECTION (MAIN P.C.B. (1/9)) SCHEMATIC DIAGRAM



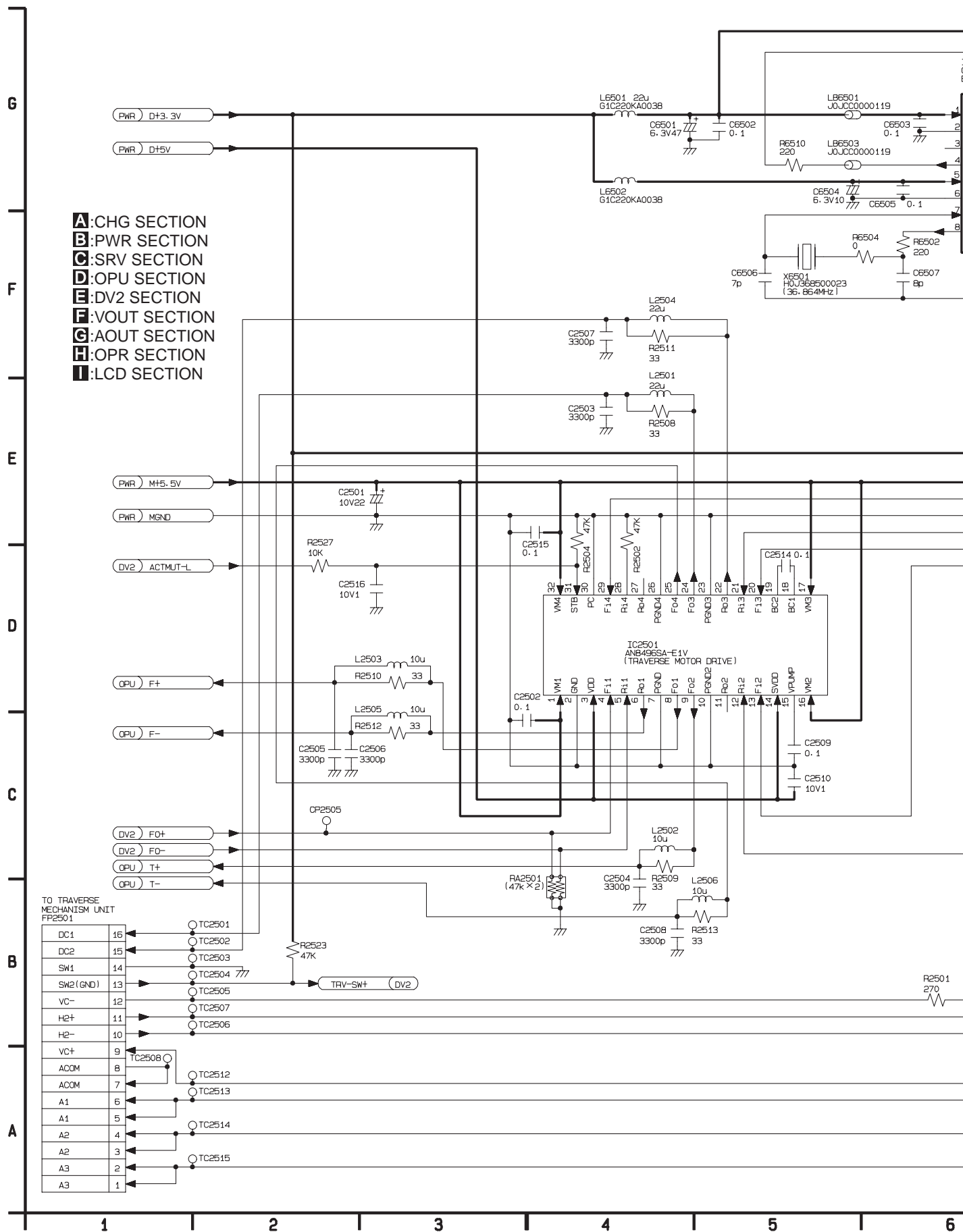
DVD-LS50PP CHARGE BATTERY SECTION
(MAIN P.C.B. (1/9)) SCHEMATIC DIAGRAM

16.2. POWER SUPPLY SECTION (MAIN P.C.B. (2/9)) SCHEMATIC DIAGRAM

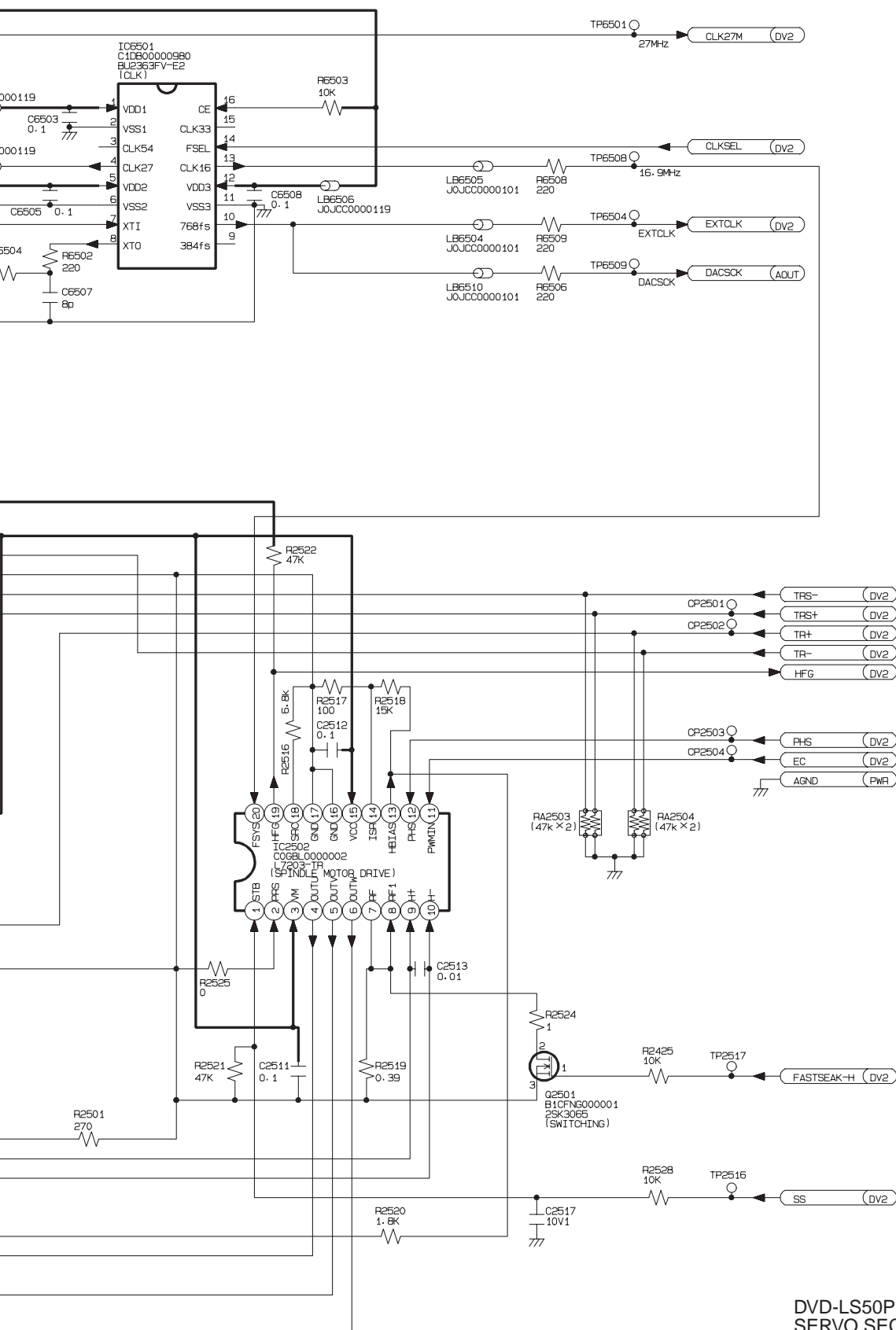




16.3. SERVO SECTION (MAIN P.C.B. (3/9)) SCHEMATIC DIAGRAM

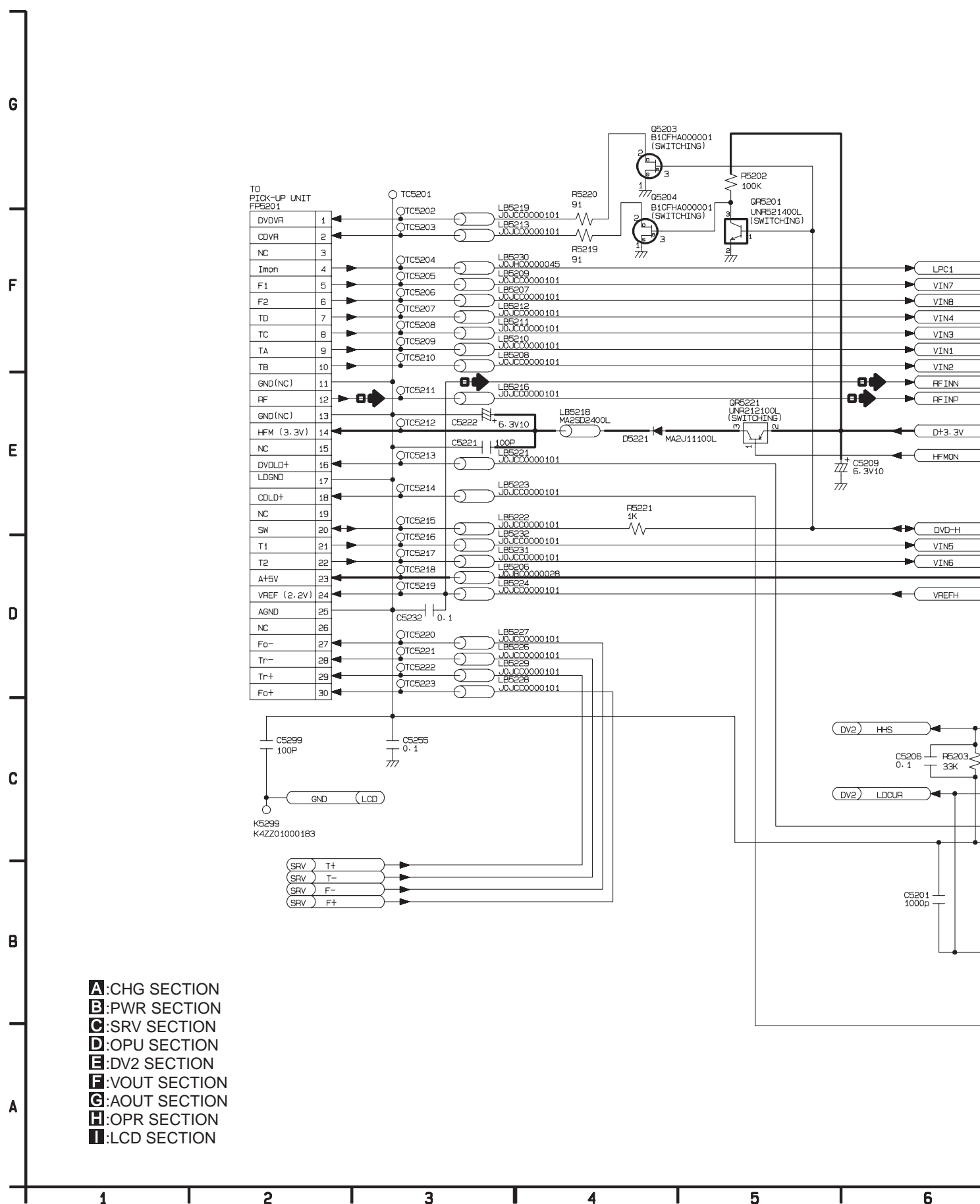


C

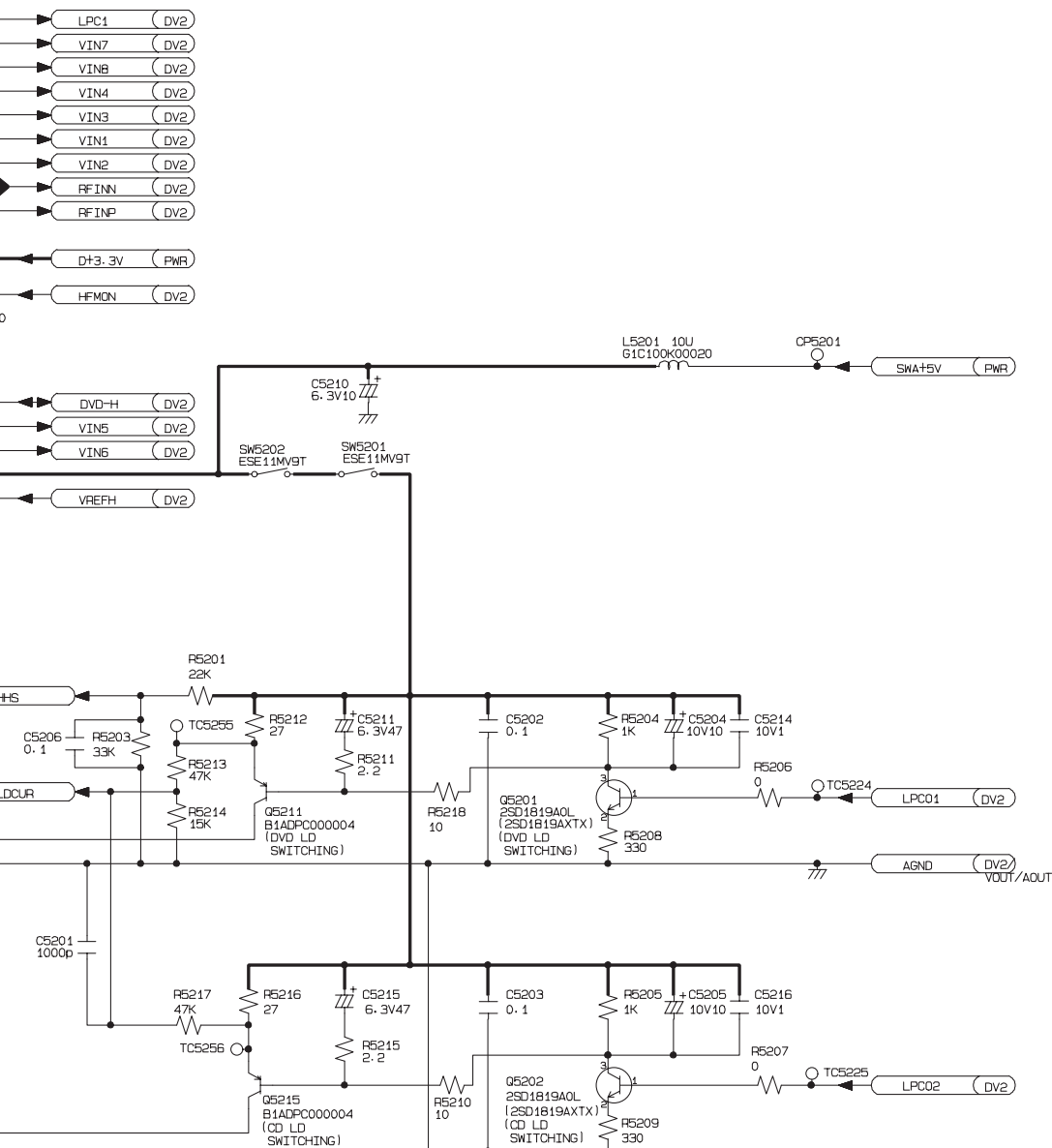


DVD-LS50PP
SERVO SECTION
(MAIN P.C.B.(3/9))
SCHEMATIC DIAGRAM

16.4. OPTICAL PICK UP SECTION (MAIN P.C.B. (4/9)) SCHEMATIC DIAGRAM






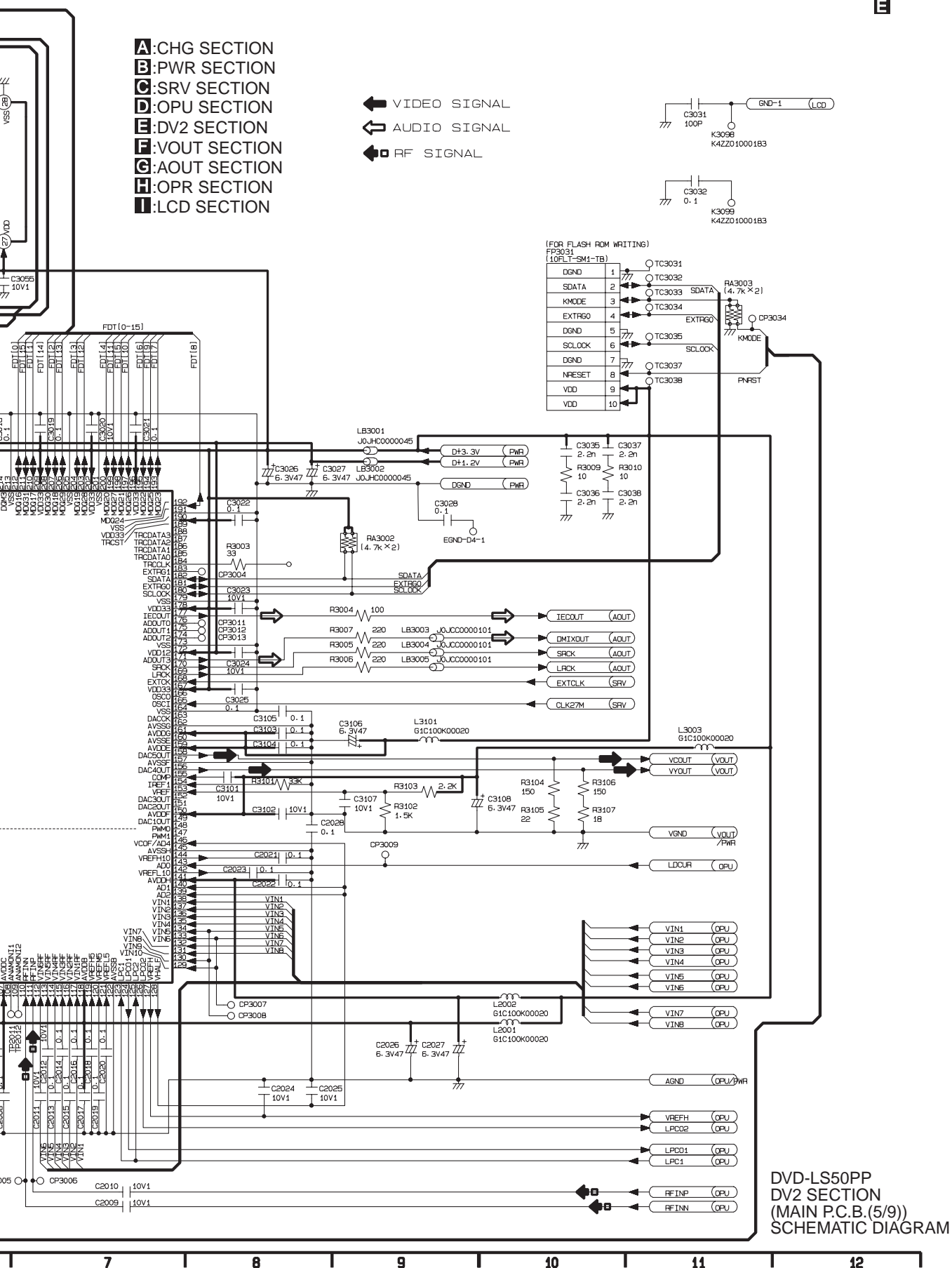
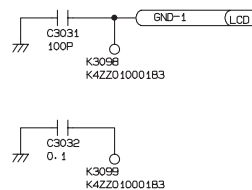
◀ RF SIGNAL



DVD-LS50PP
OPTICAL PICK UP SECTION
(MAIN P.C.B.(4/9))
SCHEMATIC DIAGRAM

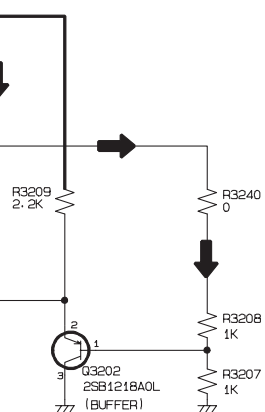


 VIDEO SIGNAL
 AUDIO SIGNAL
 RF SIGNAL



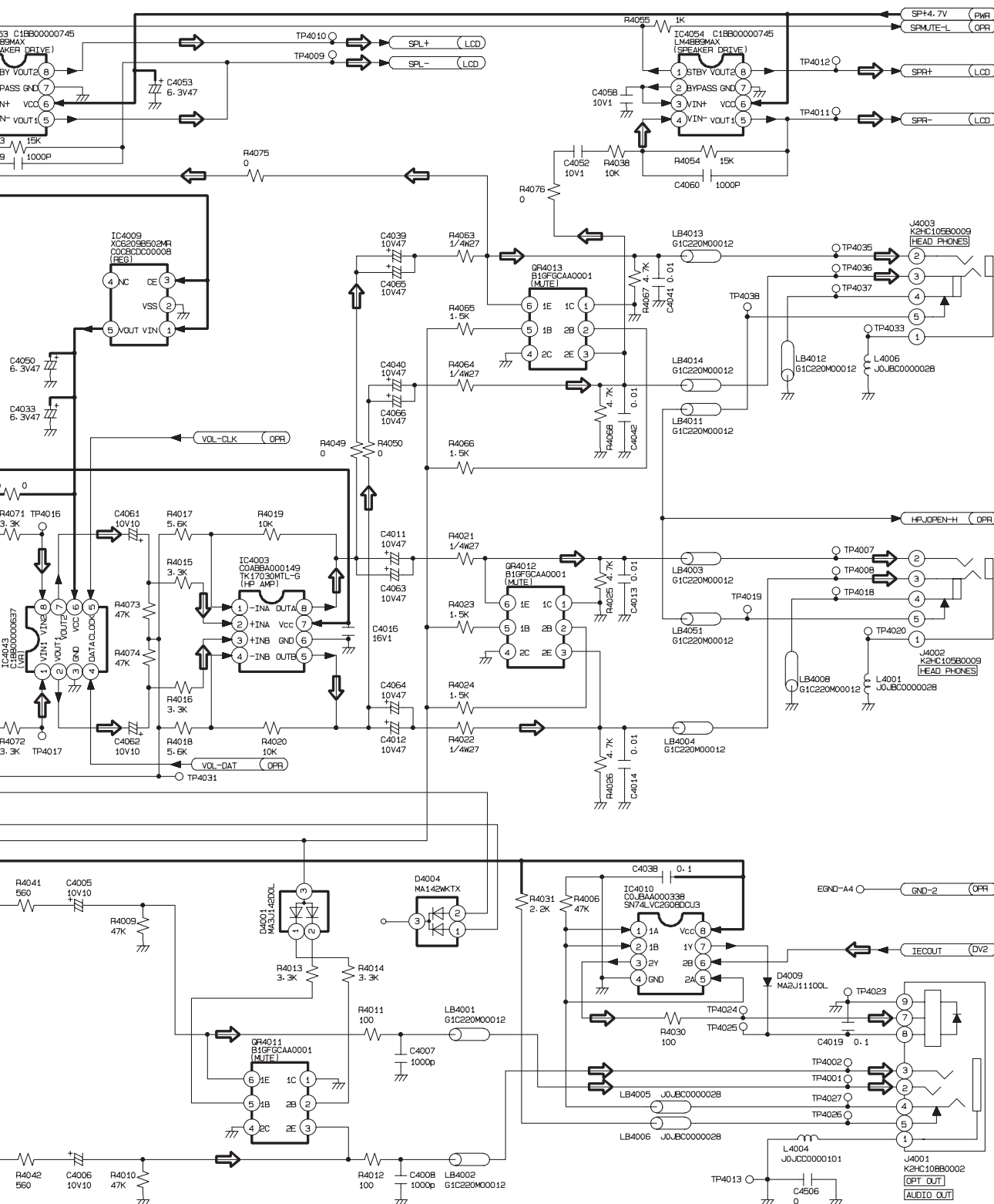
DVD-LS50PP
DV2 SECTION
(MAIN P.C.B.(5/9))
SCHEMATIC DIAGRAM





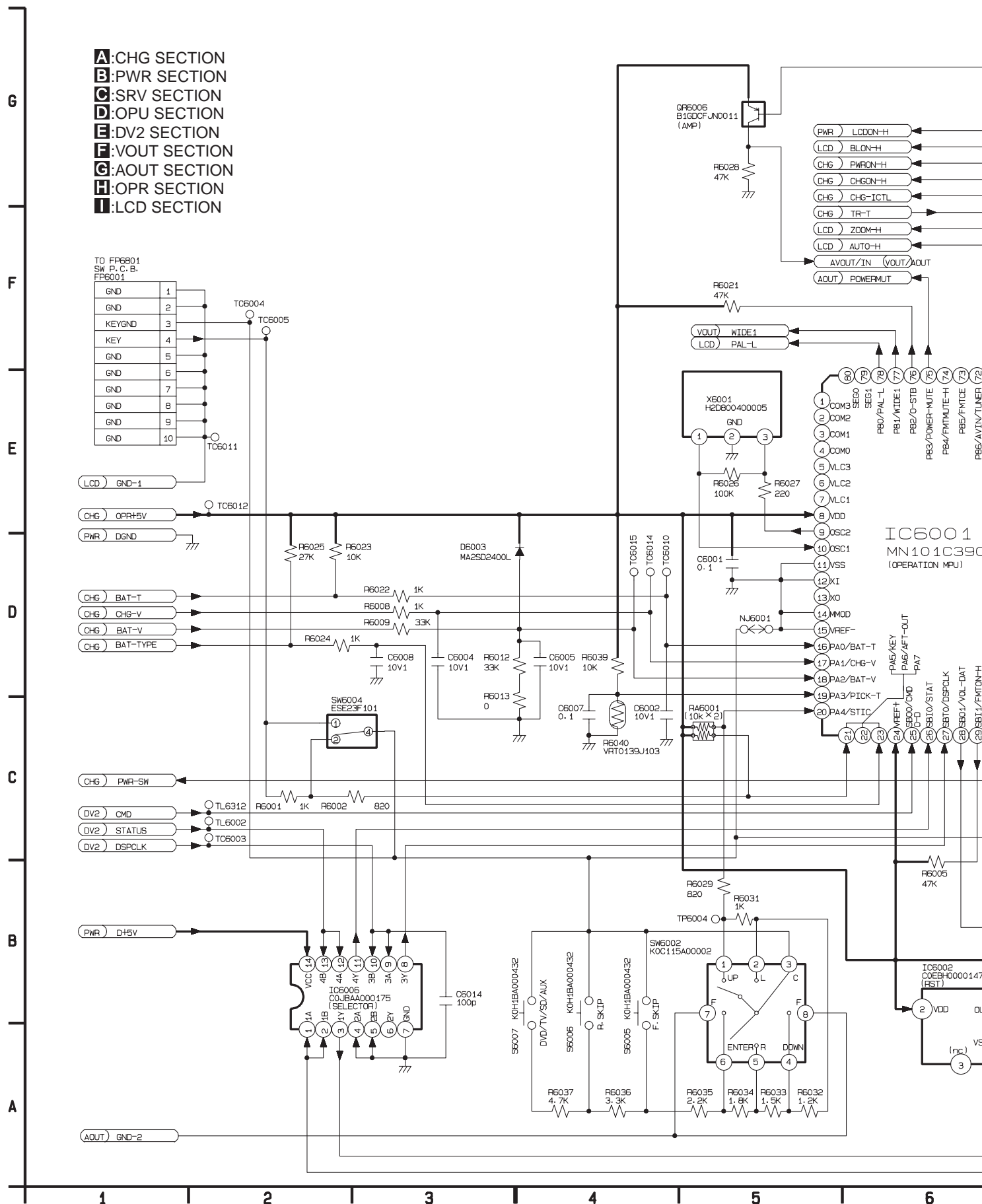
A horizontal number line with tick marks at every integer from 6 to 10. The numbers 6, 7, 8, 9, and 10 are labeled below the line.





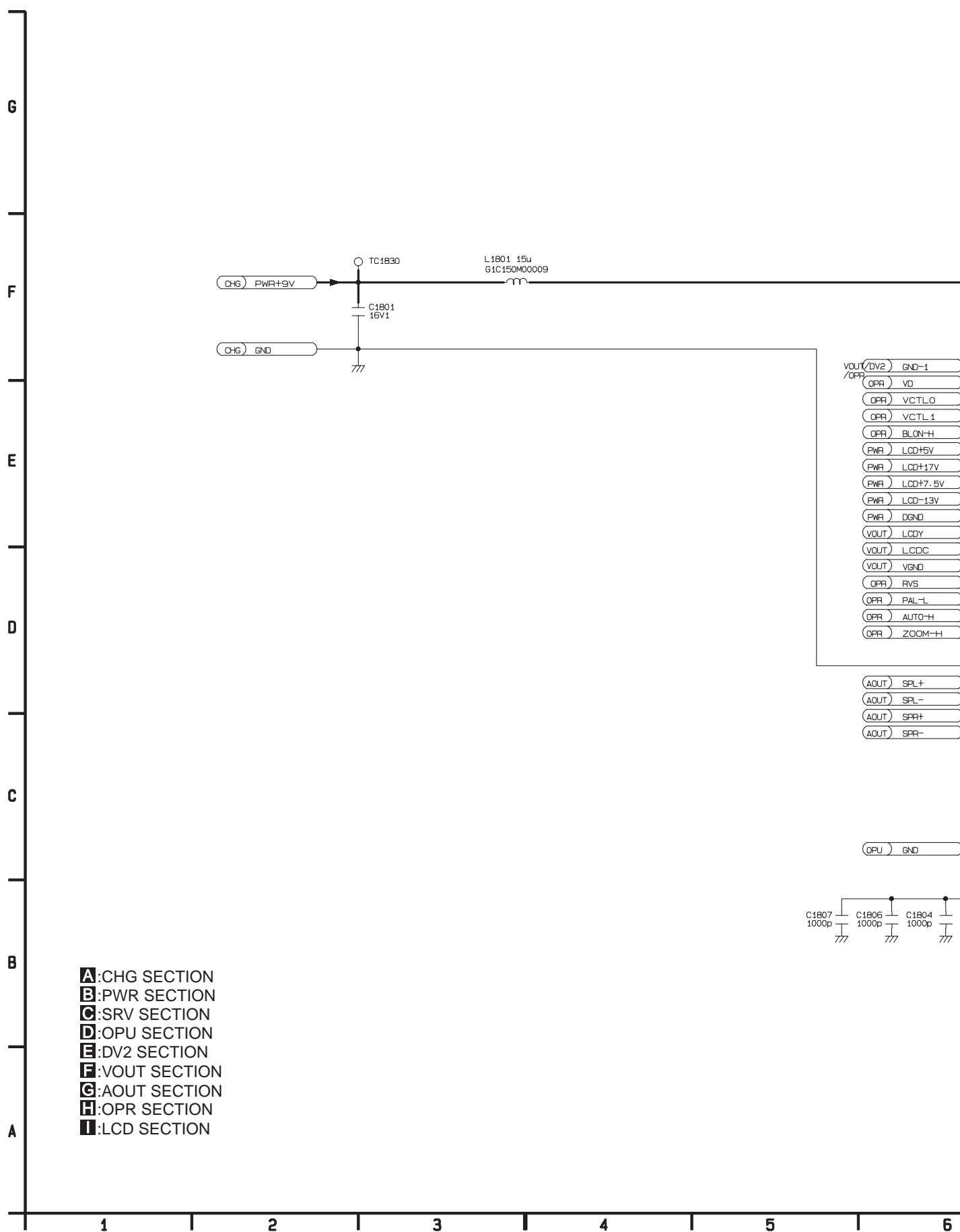
DVD-LS50PP
AUDIO OUT SECTION
(MAIN P.C.B.(7/9))
SCHEMATIC DIAGRAM

16.8. OPERATION SECTION (MAIN P.C.B. (8/9)) SCHEMATIC DIAGRAM

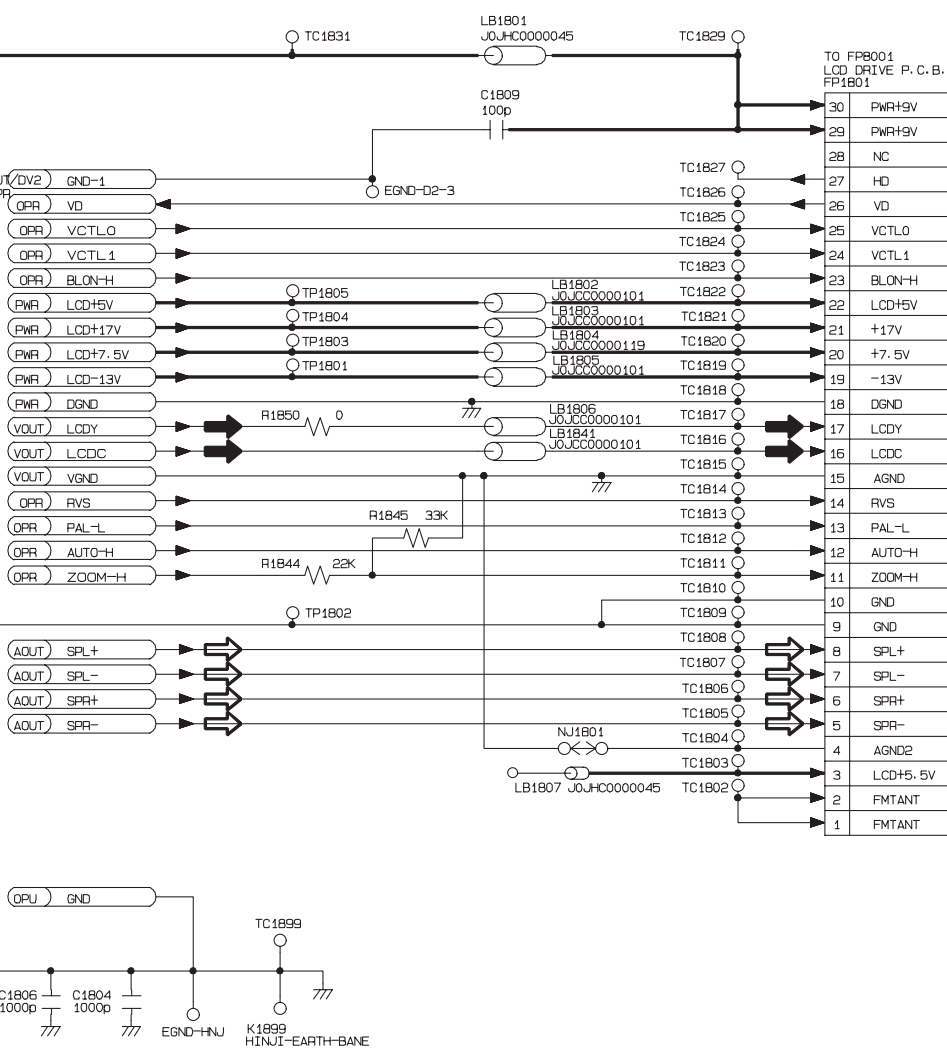




16.9. LCD OUT SECTION (MAIN P.C.B. (9/9)) SCHEMATIC DIAGRAM

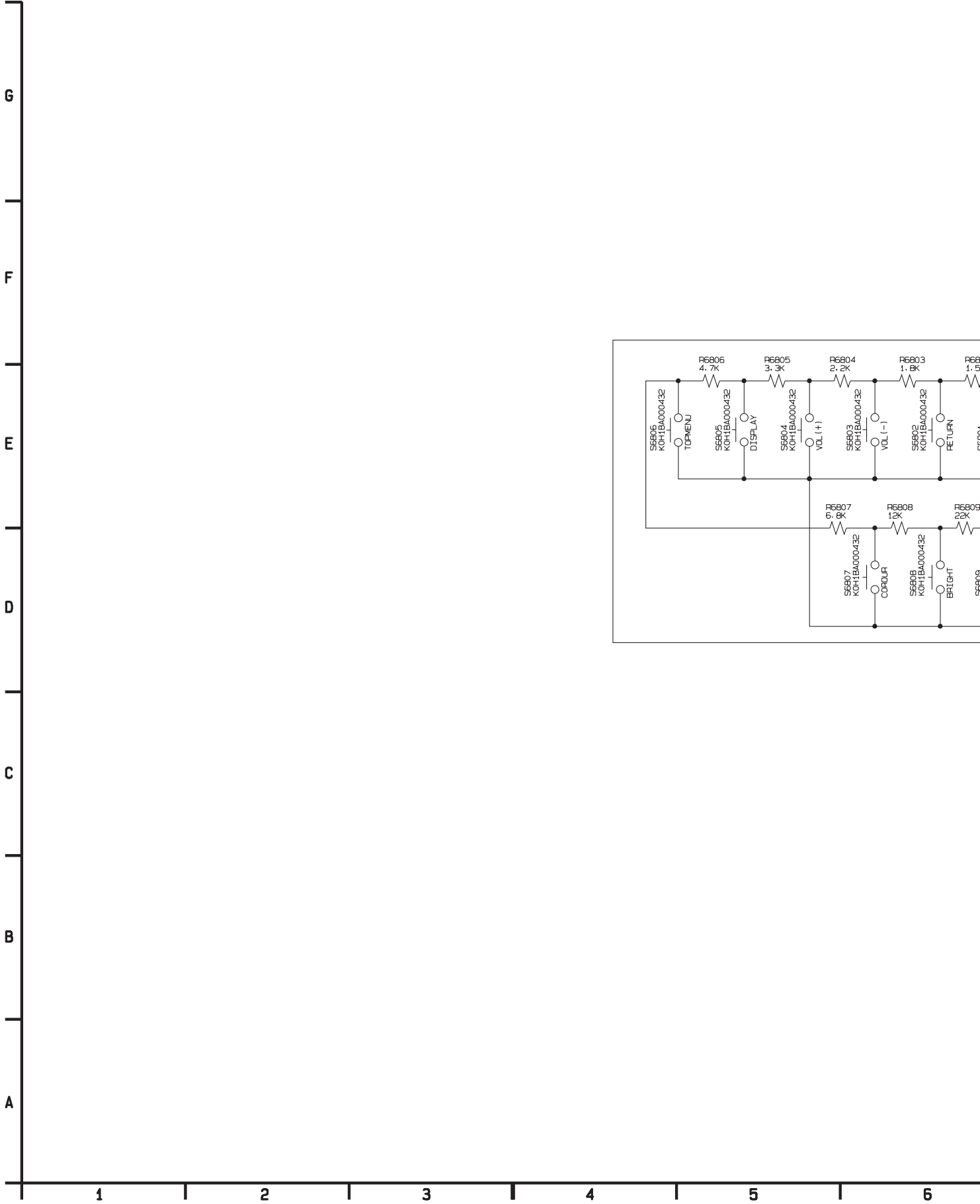


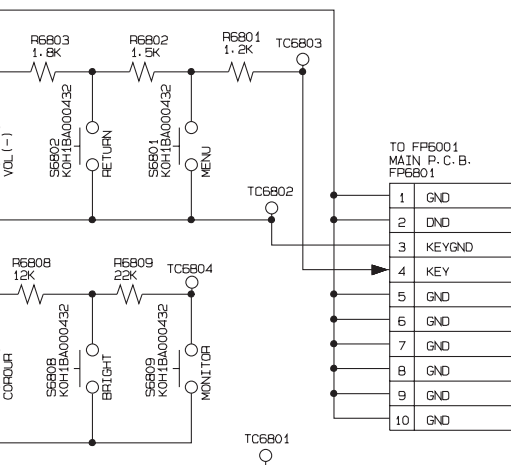
← VIDEO SIGNAL
 ← AUDIO SIGNAL



DVD-LS50PP
 LCD OUT SECTION
 (MAIN P.C.B.(9/9))
 SCHEMATIC DIAGRAM

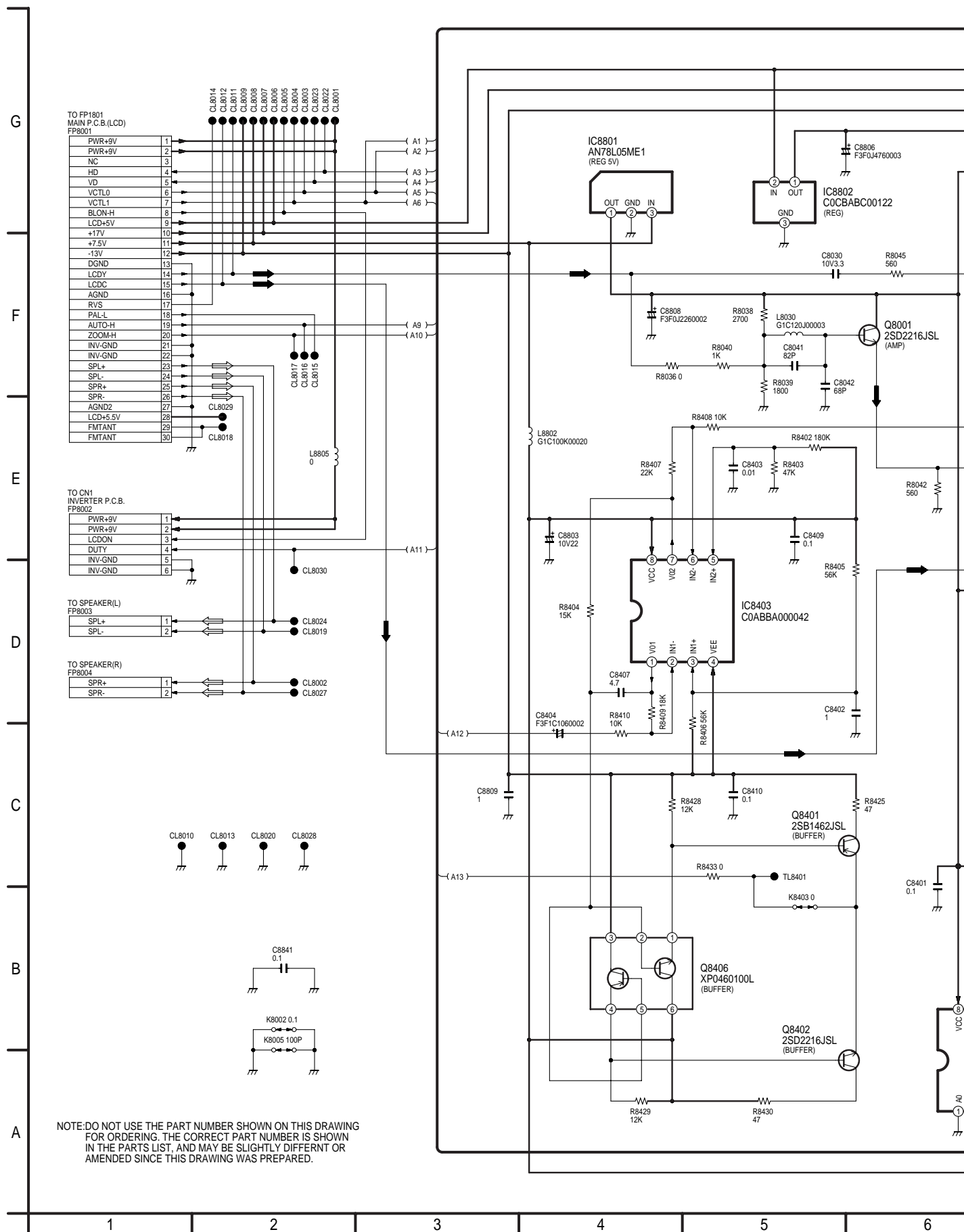
16.10. SW SCHEMATIC DIAGRAM

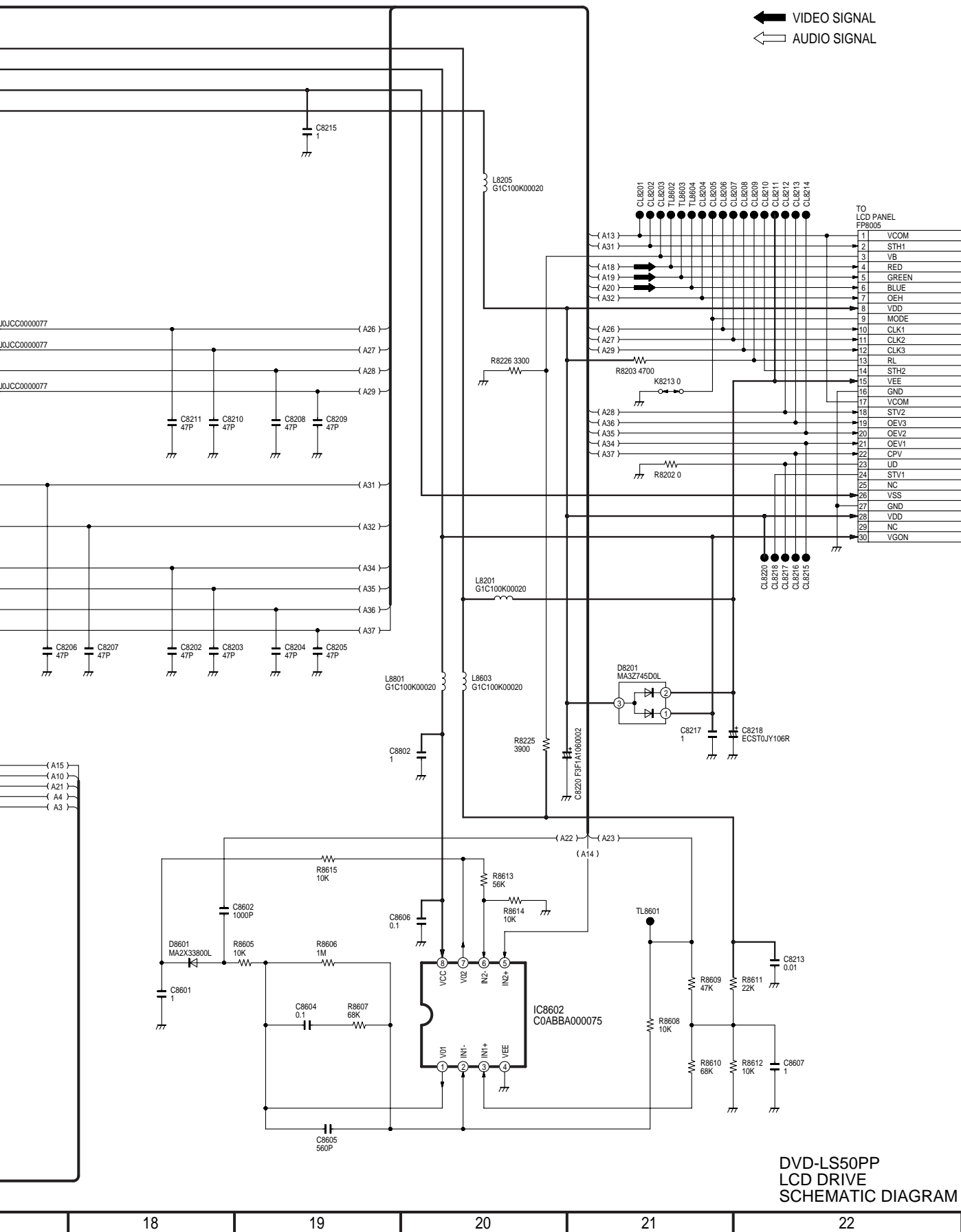




DVD-LS50PP
SW
SCHEMATIC DIAGRAM

16.11. LCD DRIVE SCHEMATIC DIAGRAM





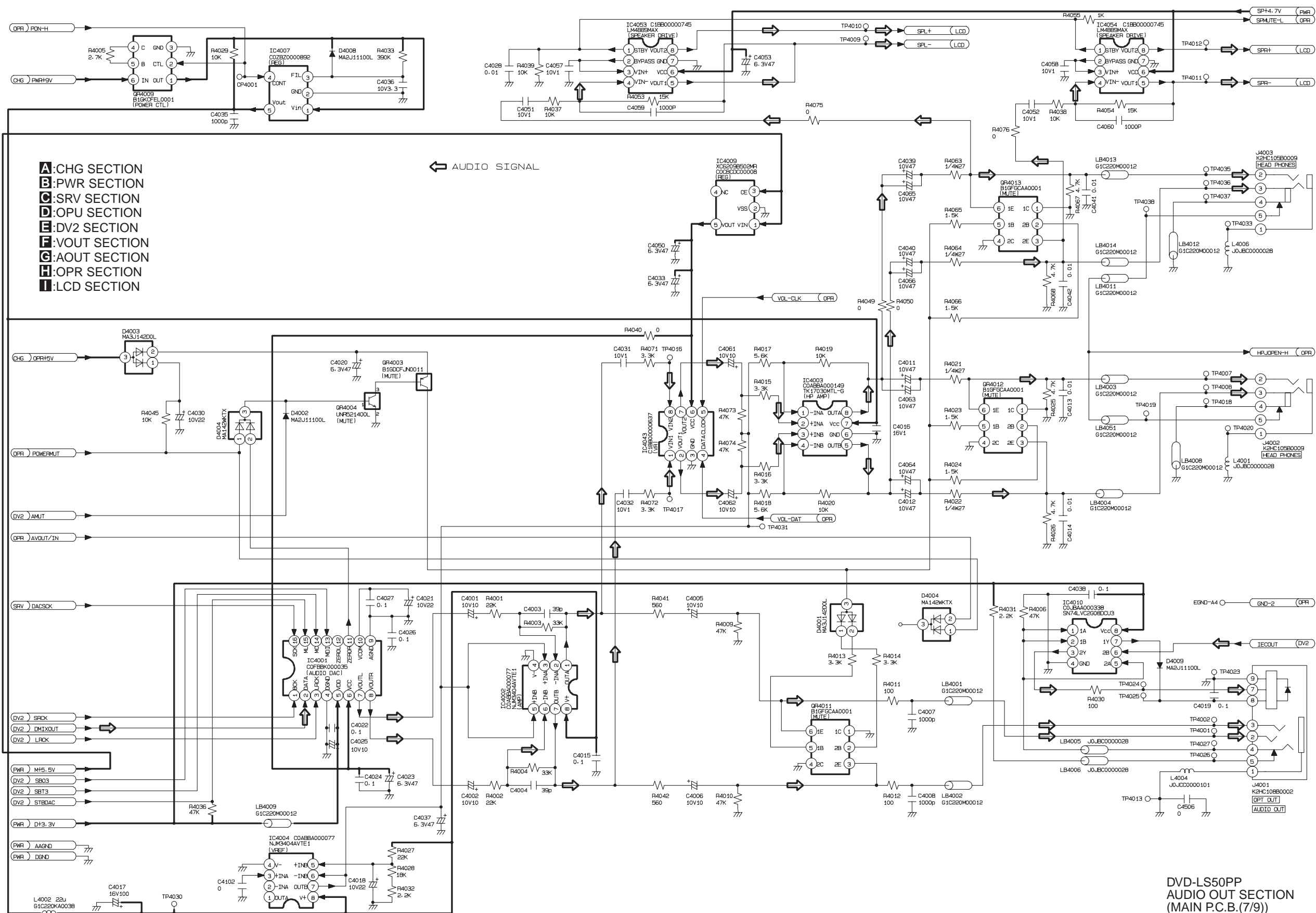
18

19

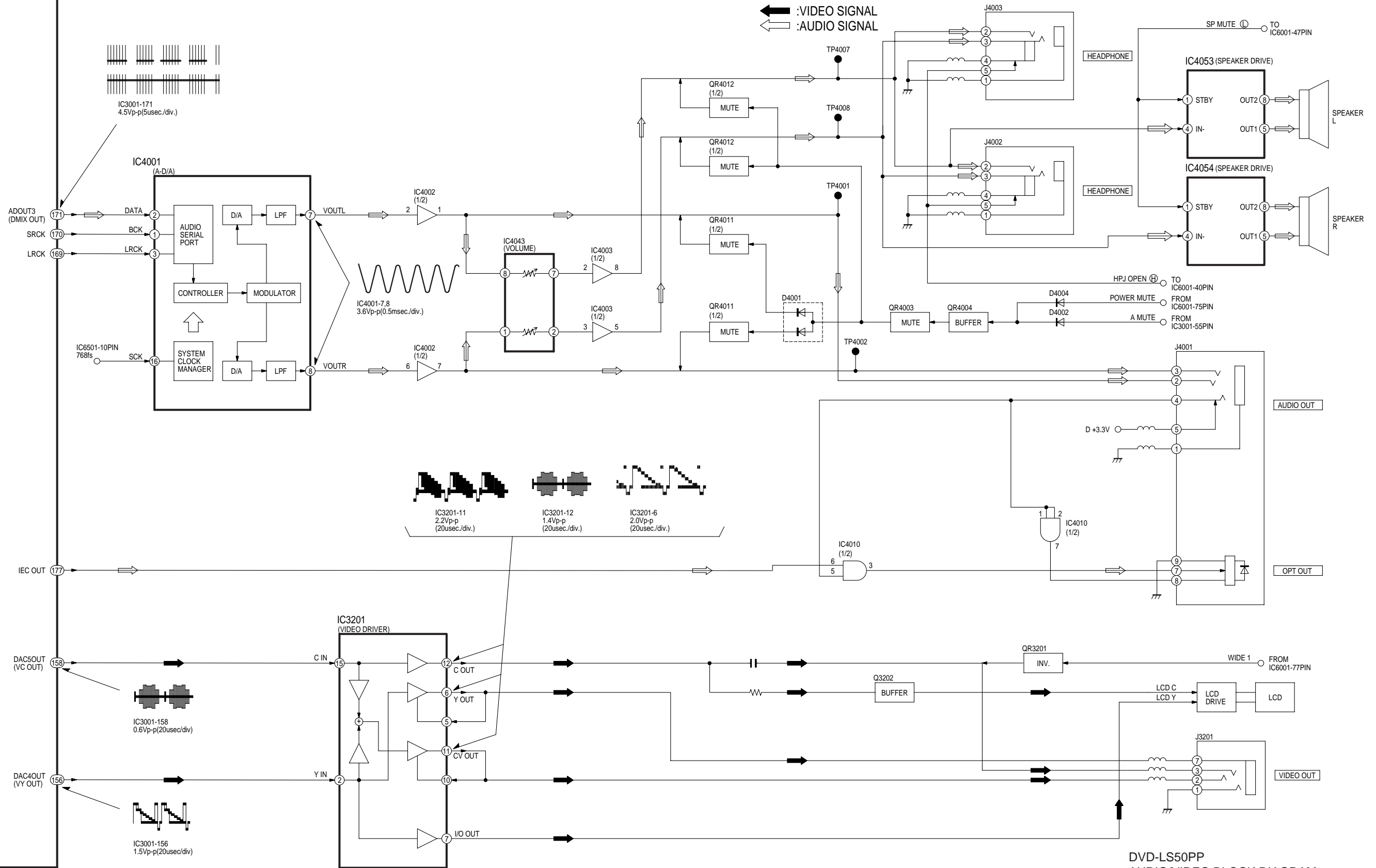
20

21

22

DVD-LS50PP
AUDIO OUT SECTION
(MAIN P.C.B.(7/9))
SCHEMATIC DIAGRAM

IC3001
(DV2.1)



DVD-LS50PP
AUDIO/VIDEO BLOCK DIAGRAM

G

F

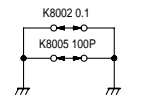
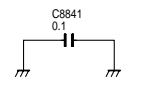
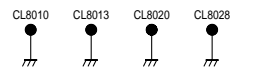
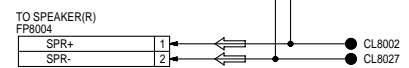
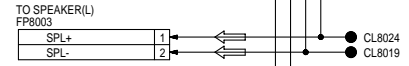
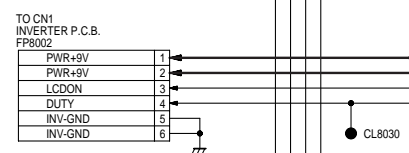
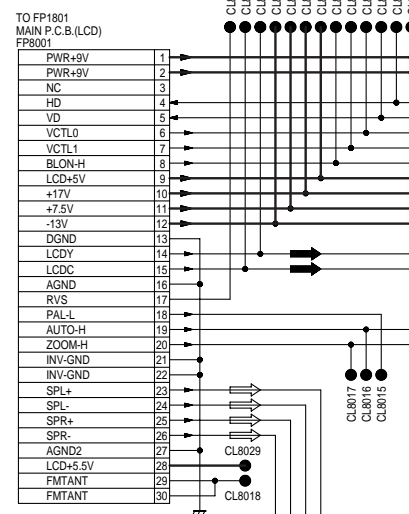
E

D

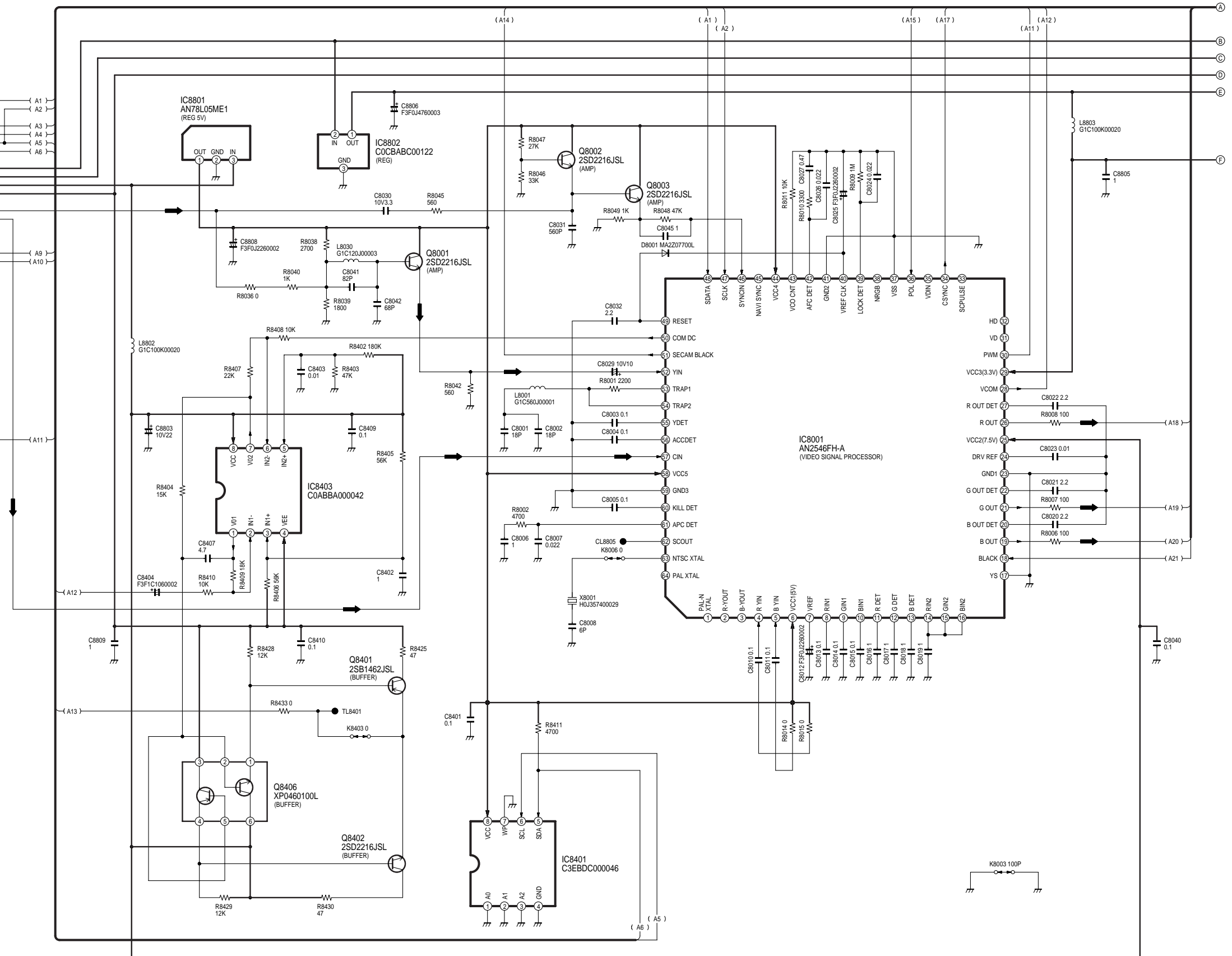
C

B

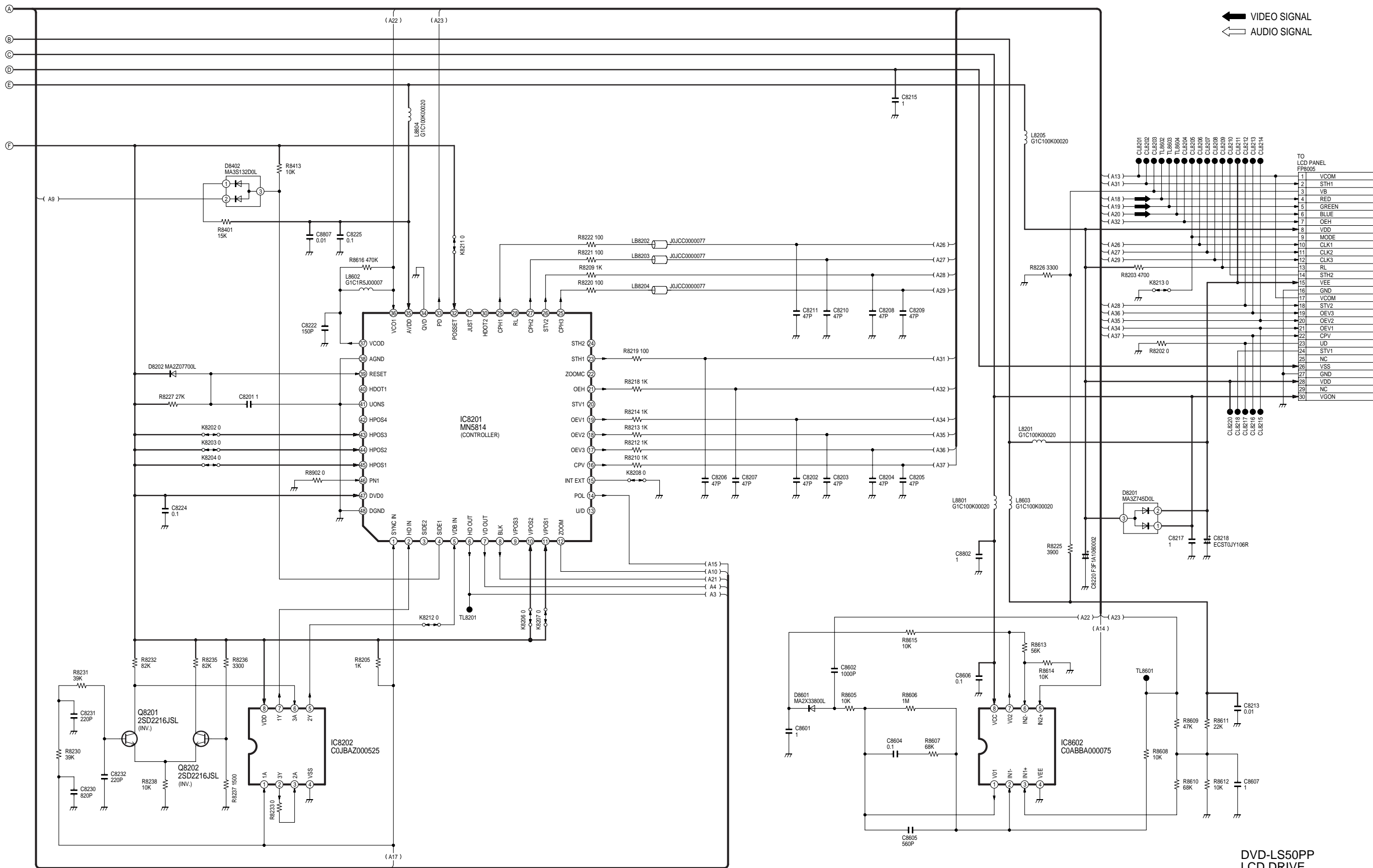
A



NOTE:DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING
FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN
IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERNT OR
AMENDED SINCE THIS DRAWING WAS PREPARED.



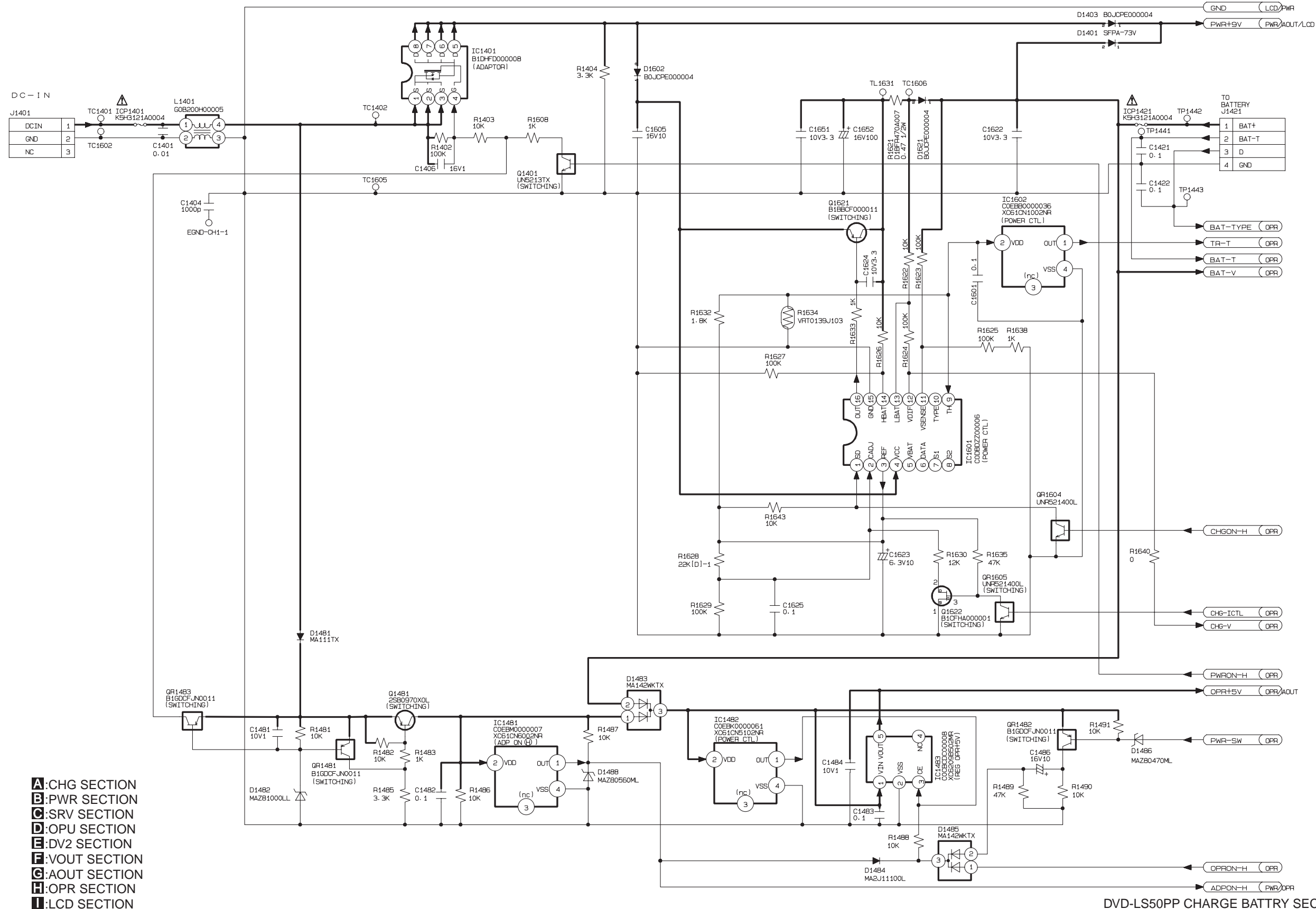
DVD-LS50PP
LCD DRIVE SCHEMATIC DIAGRAM



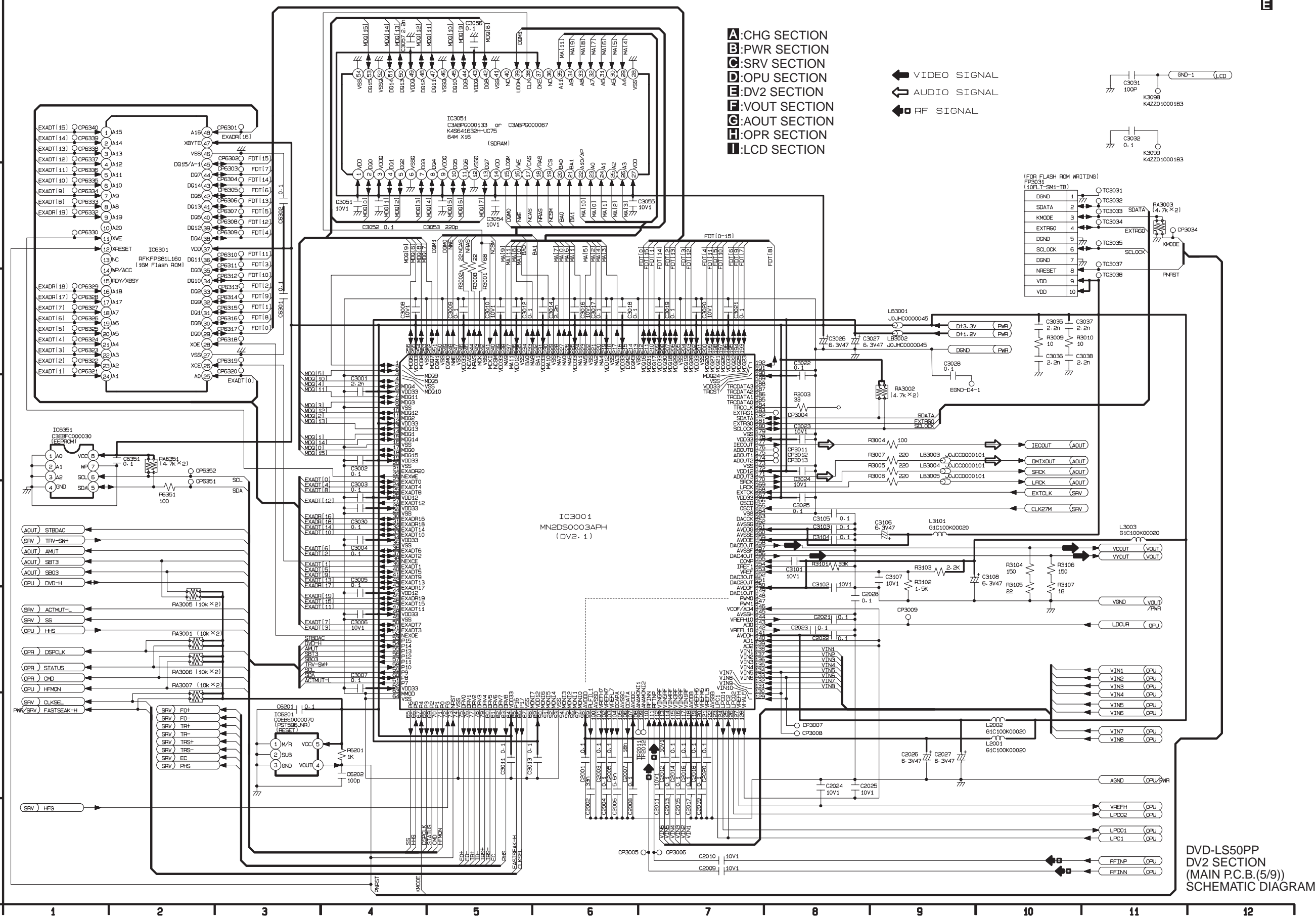
DVD-LS50PP
LCD DRIVE
SCHEMATIC DIAGRAM

DC-IN

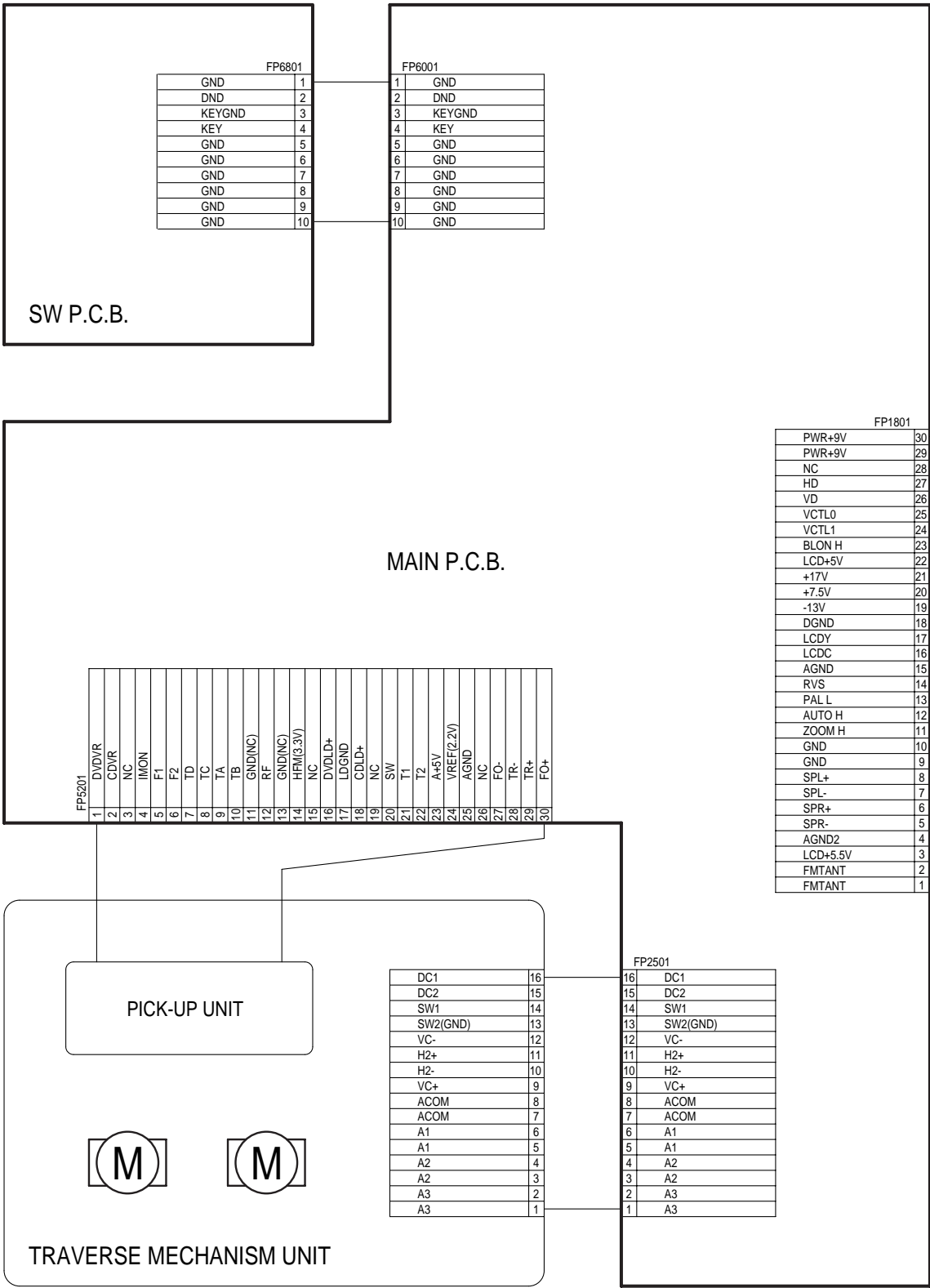
J1401	DCIN	1
	GND	2
	NC	3

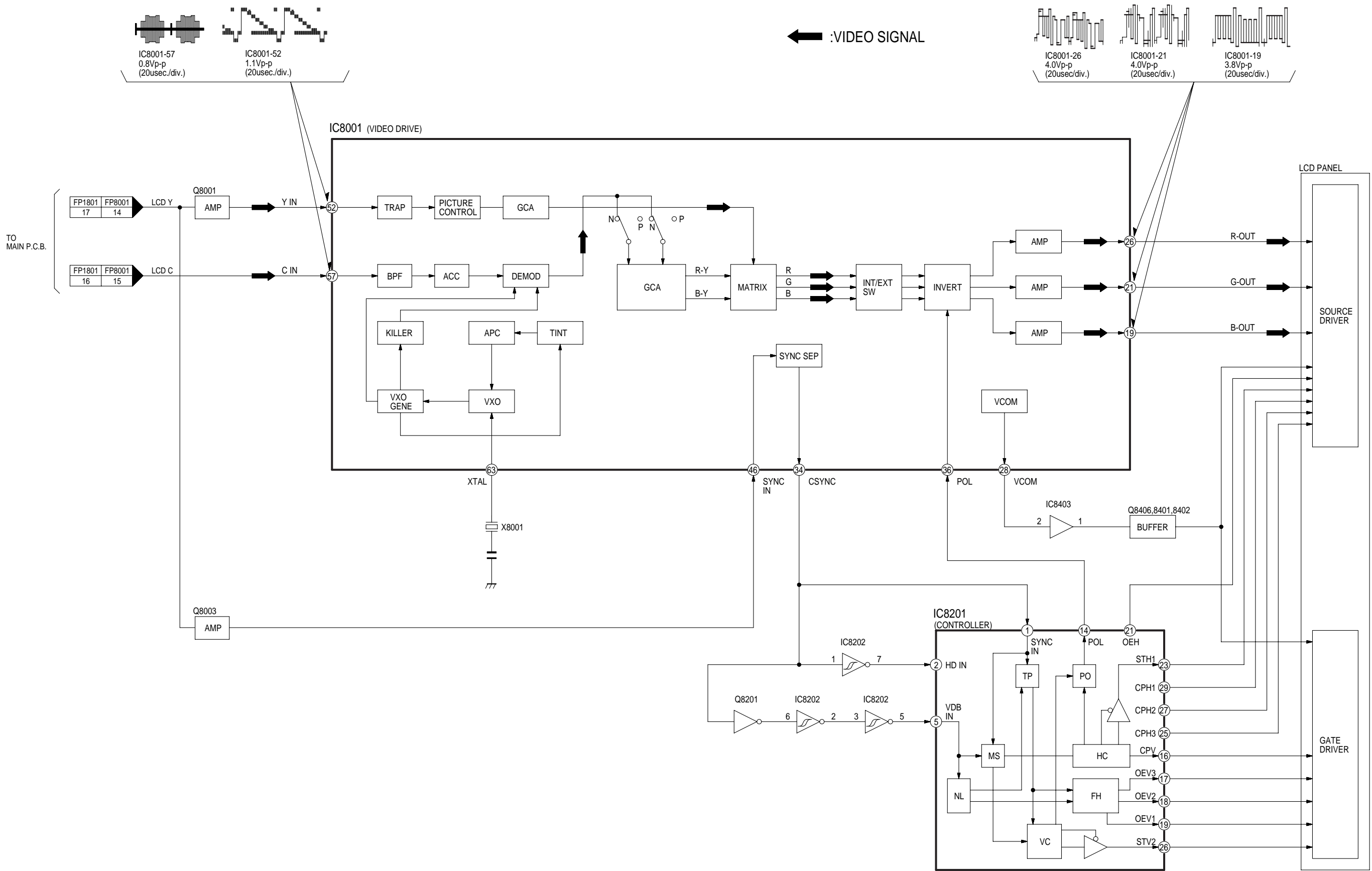


DVD-LS50PP CHARGE BATTERY SECTION
(MAIN P.C.B. (1/9)) SCHEMATIC DIAGRAM



F
E
D
C
B
A





DVD-LS50PP
LCD DRIVE BLOCK DIAGRAM

A vertical scale with labels A, B, C, D, E, and F from bottom to top, with horizontal tick marks.

D

C

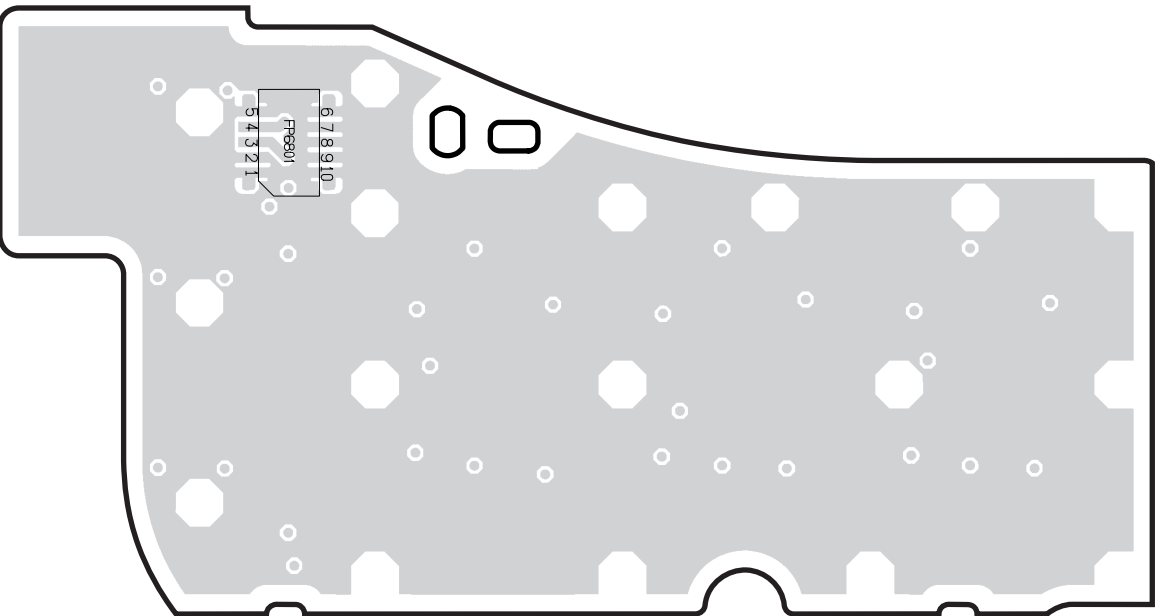
B



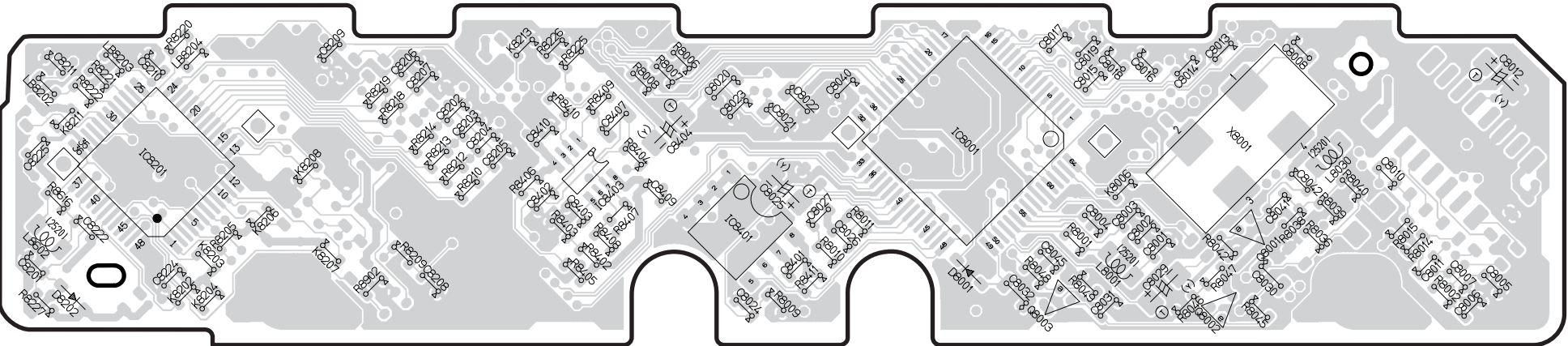
1	2	3	4	5	6	7	8	9
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DVD-LS50PP
SW P.C.B. (1/2) (RFKBL50CP)
& LCD DRIVE P.C.B. (1/2) (RFKBL50LP)

SW P.C.B. (2/2)



LCD DRIVE P.C.B. (2/2)



(FOIL SIDE)